

GW - 55

MONITORING REPORTS

DATE:

2002



Billings & Associates, Inc.

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April 1, 2003

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Environmental Bureau
Oil Conservation Division

Mr. Wayne Price
Petroleum Engineering Specialist
New Mexico Energy, Minerals and Natural Resources Dpt.
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

RE: Thriftway Bloomfield Refinery
2002 Annual Groundwater Monitor Report

Dear Mr. Price,

Enclosed please find a copy of the Report entitled "2002 Annual Groundwater Monitor Report" for the above mentioned site.

If you have any questions please do not hesitate to contact me at 505.345.1116.

Sincerely,



Brad Billings
Billings & Associates, Inc.

Enclosure

Cc: Ms. Terry Griffin/BioTech/Thriftway
Mr. Denny Foust, Aztec Office, NM Oil Conservation Division

THRIFTWAY REFINERY
626 Road 5500
Bloomfield, New Mexico

March 2003

Prepared by

HILLINGS & ASSOCIATES, INC

2002 ANNUAL GROUNDWATER MONITOR REPORT

Prepared for
NEW MEXICO OIL CONSERVATION DIVISION
Mr. Wayne Price, Project Manager, Santa Fe Office
&
Mr. Denny Foust, Aztec, Office

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1.0 INTRODUCTION

Pursuant to and in compliance with the requirements of the New Mexico Oil Conservation Division (NMOCD), Billings & Associates, Inc. (BAI) is pleased to submit the following 2002 Annual Monitoring and Sampling Report for the Thriftway Bloomfield Refinery, located in Bloomfield, N.M. Site is located at 626 County Road 5500. Operated under Discharge Plan GW-055

Submitted report details the monitoring and sampling data activities on refinery property. Water table elevations in monitor wells were collected on select wells in July and November 2002. All wells that could be found and which contained sufficient ground water for measurement were assessed for depth to water. New influent and effluent water samples from the on site air stripper were collected generally monthly throughout 2002.

2.0 MONITORING/SAMPLING ACTIVITIES

BioTech personnel engaged in monitoring and sampling requirements for the Thriftway Bloomfield Refinery located in Bloomfield, New Mexico. Ground water gauging events detailed in this report occurred during July and November 2002.

Air stripper influent and effluent samples from operating tower were collected for later laboratory analysis by EPA Method SW 8021B on a nominally monthly basis in 2002. Influent and effluent samples collected in July and November 2002 were analyzed for the full suite of Methodologies as outlined below in section 2.2(2.2A). Hard copy of all laboratory data sheets, attendant chain of custody information and Quality Control Data are found in **Appendix A**.

Appendix B contains this same grouping of information on the monitor wells sampled for laboratory analyses in July and November 2002. Ground water samples were analyzed by EPA Method SW 8021B.

2.1 Ground Water Measurement

At each gauging event, depth to ground water measurements were made and recorded for available monitor wells. A Solonist Probe was used to measure from the survey point at top of casing to identified ground water level. Data was generated to the nearest 100th of a foot. **Table 1A** displays most recent groundwater table information. Historic ground water elevation data has been supplied in previous reports. Ground water measurements were collected in fourteen (14) monitor wells for July 2002 sampling and twelve (12) for the November 2002 sampling event.

Field data have been corrected to measured elevations, where available, and were used to generate a potentiometric surface (as of the 11/2002 sample dates). This information is found on **Figure 1**.

2.2 Water Sample Collection

During transfer of water (influent and effluent) to sample container, care is taken to ensure that no head space or air bubbles remain in sample container and that a meniscus is created at top of sample container. Following closure of sample container, the sample was rotated and agitated, further ensuring that the sample container was void of free air.

During the November 2002 ground water sampling event, monitor well locations were sampled for later laboratory analysis following appropriate purge of bore volumes and rebound time allotment. Samples were analyzed for and by the following methods: Alkalinity, Total (method M2320B), Anions by Ion Chromatography (method E300), Aromatic Volatiles by GC/PID (method SW8021B), Conductivity @ 25C (method E120.1), Hardness, Total (method M2340B), ICP Metals, Dissolved (method SW6010B), ICP Metals, Total (method SW6010B), Mercury, total (method SW7470), pH (method E150.1), Polynuclear Aromatic Hydrocarbons (method SW8270C), Total Dissolved Solids (method CALC) and Total Dissolved Solids (method E160.1). All samples were collected as per accepted New Mexico protocol/regulation.

During July and November sampling events, influent and effluent samples were analyzed via the above methods.

Monthly samples collected at influent and effluent ports at the air stripper were assessed by methods 8021B.

2.3 Sample Preservation/Handling

All sample containers were appropriate for required testing and preserved as necessary for the requested analyses. All samples were handled/delivered as per accepted protocols.

2.4 Sample Transport

Following sample collection, each sample container was labeled for origin, time/date of collection, sample type, identification of sampler, preservative used and the requested laboratory analysis. Each sample was then logged for Chain of Custody data sheets. Samples requiring temperature reduction for shipping/transport were then placed in iced cooler.

2.5 Data Base

Historic laboratory data have been presented in previous reports. **Table 2A** details data collected concerning the reporting dates covered in this report. Laboratory data from influent and effluent samples of ICP metals total, mercury, anions, ICP metals dissolved, alkalinity, conductivity, hardness, pH, total dissolved solids (both calculated and in residue) PAH's and volatile organic compounds are found in **Appendix A**. This appendix also contains copies of QA/QC statements and chain of custody information. **Appendix A** also contains laboratory results, QA/QC and chain of custody (COC) information on monitor wells/ground water samples.

3.0 EQUIPMENT DECONTAMINATION

To prevent cross-contamination and ensure valid data, BioTech personnel used strict decontamination protocol. For all monitor well measurement and sample collection, the following method for decontaminating equipment was employed:

- Wash with Alconox and distilled water
- Rinse with distilled water
- Wash with Alconox and distilled water
- Double rinse with distilled water

4.0 DISCUSSION AND RECOMMENDATIONS

Developed ground water flow direction indicates sufficient capture of the ground water contamination is being maintained by the currently operating ground water treatment system. This is in general agreement with historical data.

Figure 2 represents a ground water contour of dissolved benzene as of the November 2002 sampling event. **Figure 3** displays the MTBE ground water contour for the same sampling event. **Figures 4, 4A, 4B**, in mapped format, indicate the values for conductivity, chlorides and TDS as of the November 2002 sampling event.

Ground water flow is nominally to the west/northwest at an approximate gradient of 0.05 ft/ft.

Of the monitor wells sampled, the highest benzene value found was at MW-12 at 12 parts per billion (ppb). Current value is approximately 50% lower than the previous year. The highest MTBE value assessed during the same monitoring event was found at well MW-20 at 350 ppb. Again, this is about 50% less than last year in this well.

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Most recent influent and effluent water samples revealed the following: Influent was assessed at 340 ppb benzene (down from >800 ppb last year). Effluent was assessed at <0.5 ppb benzene.

These data indicate an adequately functional stripper system.

BAI believes the currently operating ground water recovery system is maintaining adequate hydraulic capture.

Overall dissolved ground water contamination data indicates site wide reduction in dissolved organic contaminant levels as of the November 2002 sampling date.

It is BAI's recommendation, based on current and historical data review, no additional work effort is needed beyond continued sampling by BioTech based on approved schedules.

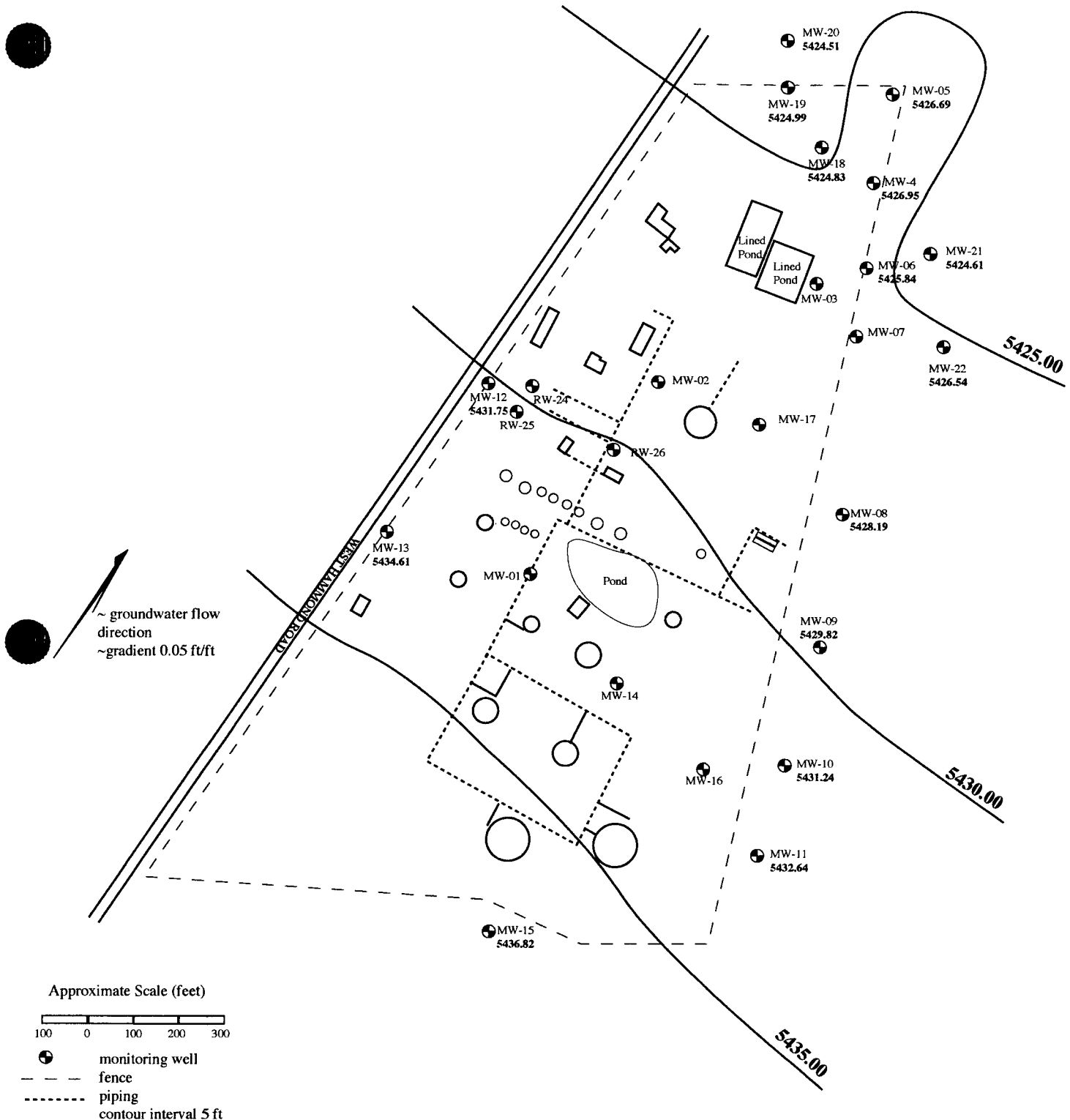
Relative to points defined by NMOCD's letter dated November 19, 2001, the following is presented:

- Lagoon liners have been inspected by BioTech personnel.
- Below grade sumps at Tank #11 and Tank #12 have been cleaned out.
- Soils on North side of property were sampled and have been removed. Worked was accomplished by Empire Tech and EnviroTech. Bill of lading from soil removed at this location and near/at valve on Tank #23 is located in Appendix C. Laboratory data for soils is located in Appendix D.

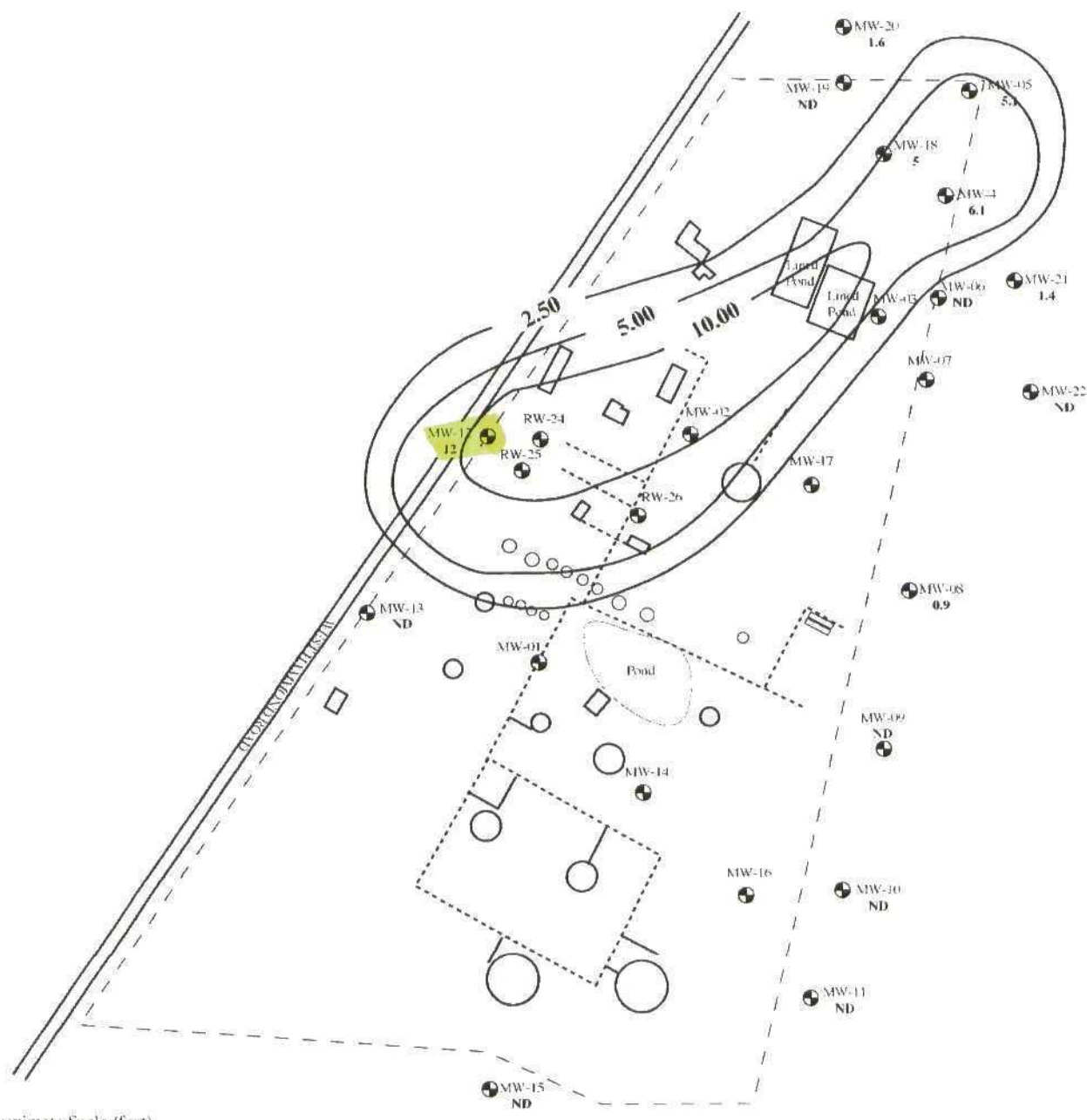
Brad Billings

President

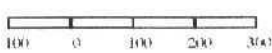
Billings & Associates, Inc.



DRAWN BY: G. Billings	Figure 1	 BILLINGS & ASSOCIATES, INC.
DATE: 2/4/2003	Potentiometric Surface (11/22/2002)	
CASE NO:	Site Name: Thriftway Refinery	
UST FACILITY NO:	Site Location: 626 RD 5500	
	Bloomfield, NM	

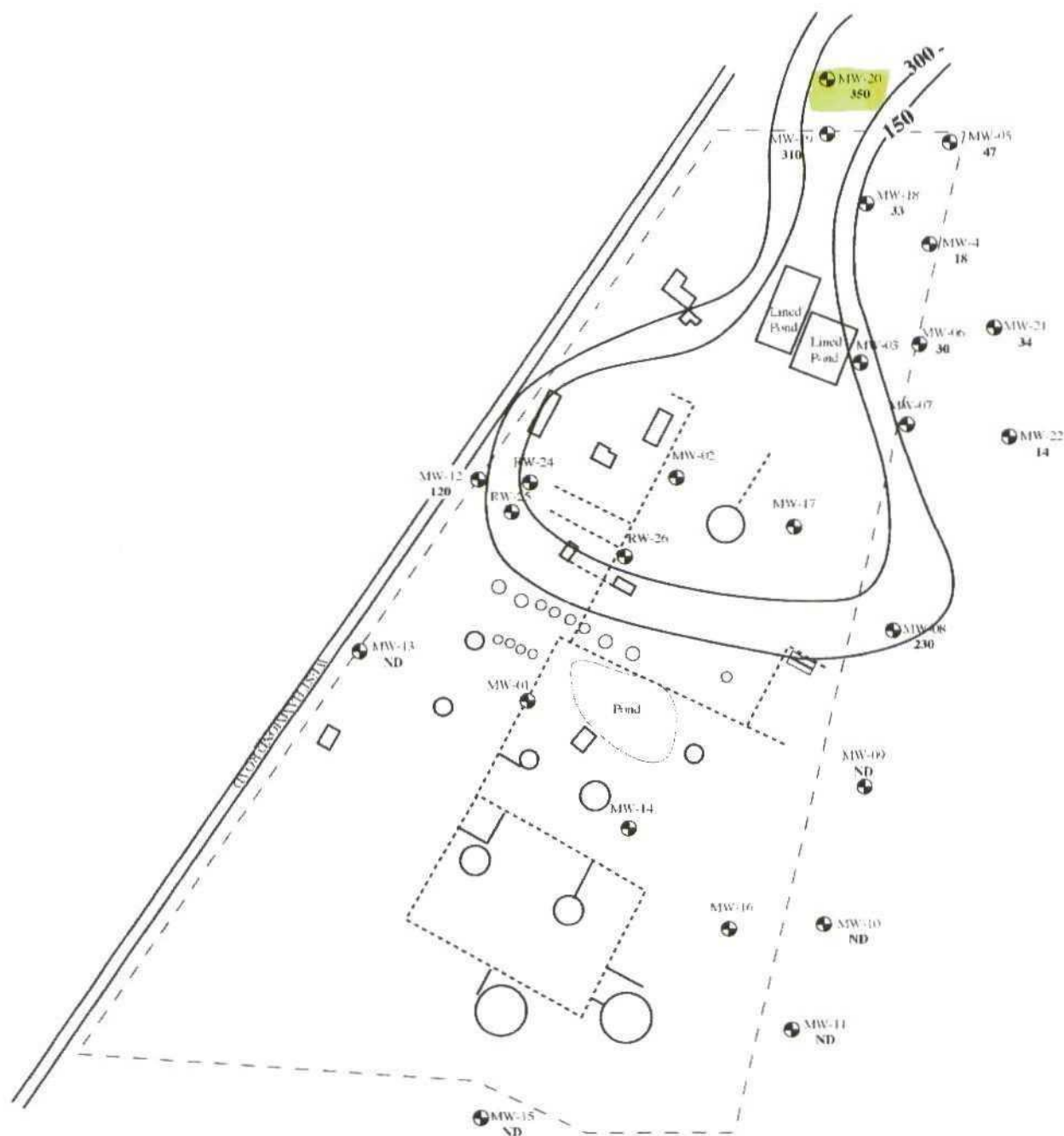


Approximate Scale (feet)

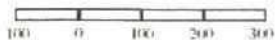


- monitoring well
- fence
- piping
- concentrations ppb
- contour interval (X2)

DRAWN BY: G. Billings	Figure 2	 BILLINGS & ASSOCIATES, INC.
DATE: 2/5/2003 CASE NO:	Benzene Contour (11/12/2002)	
UST FACILITY NO:	Site Name: Thriftway Refinery	
	Site Location: 626 RD 5500	
	Bloomfield, NM	



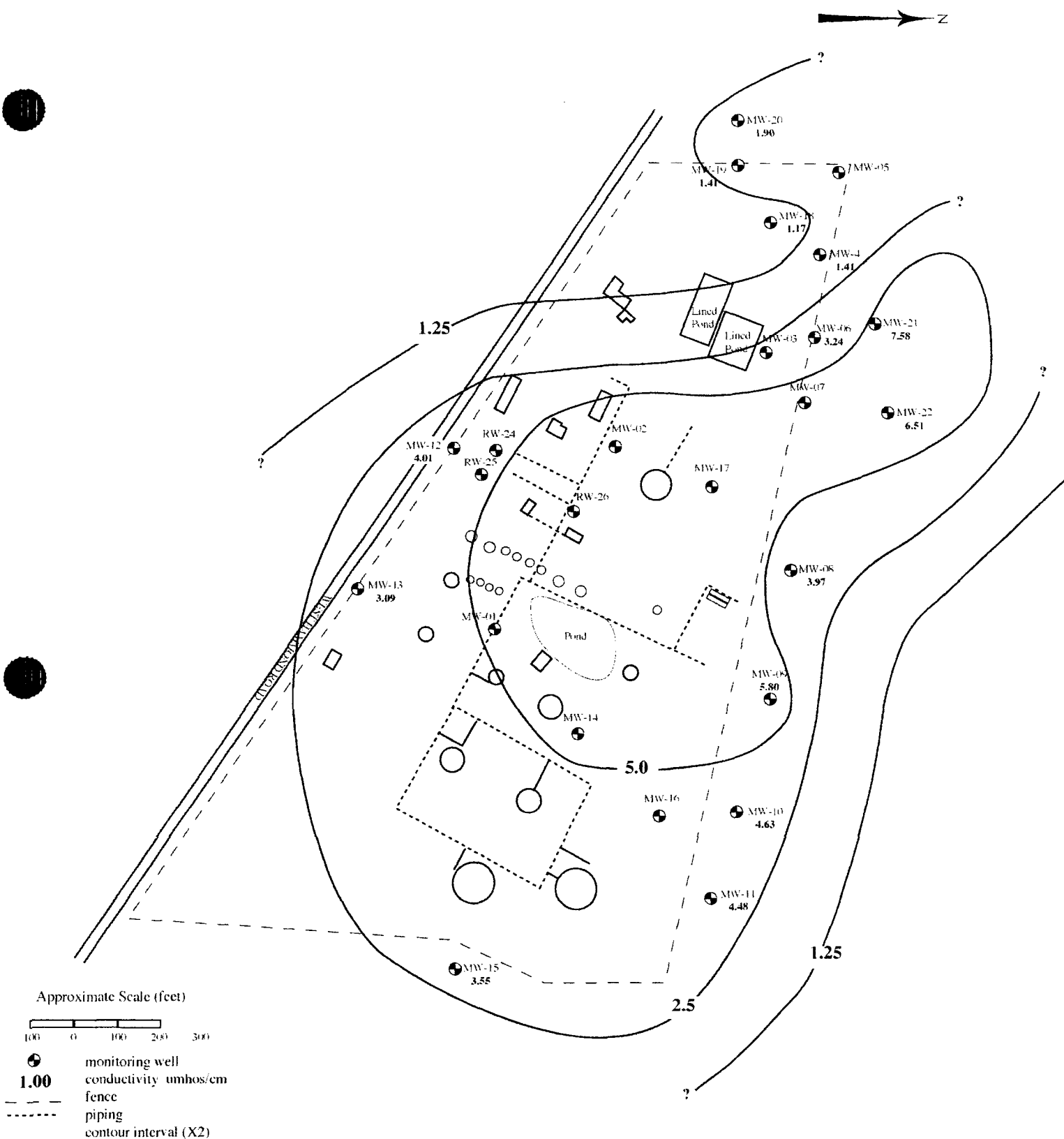
Approximate Scale (feet)



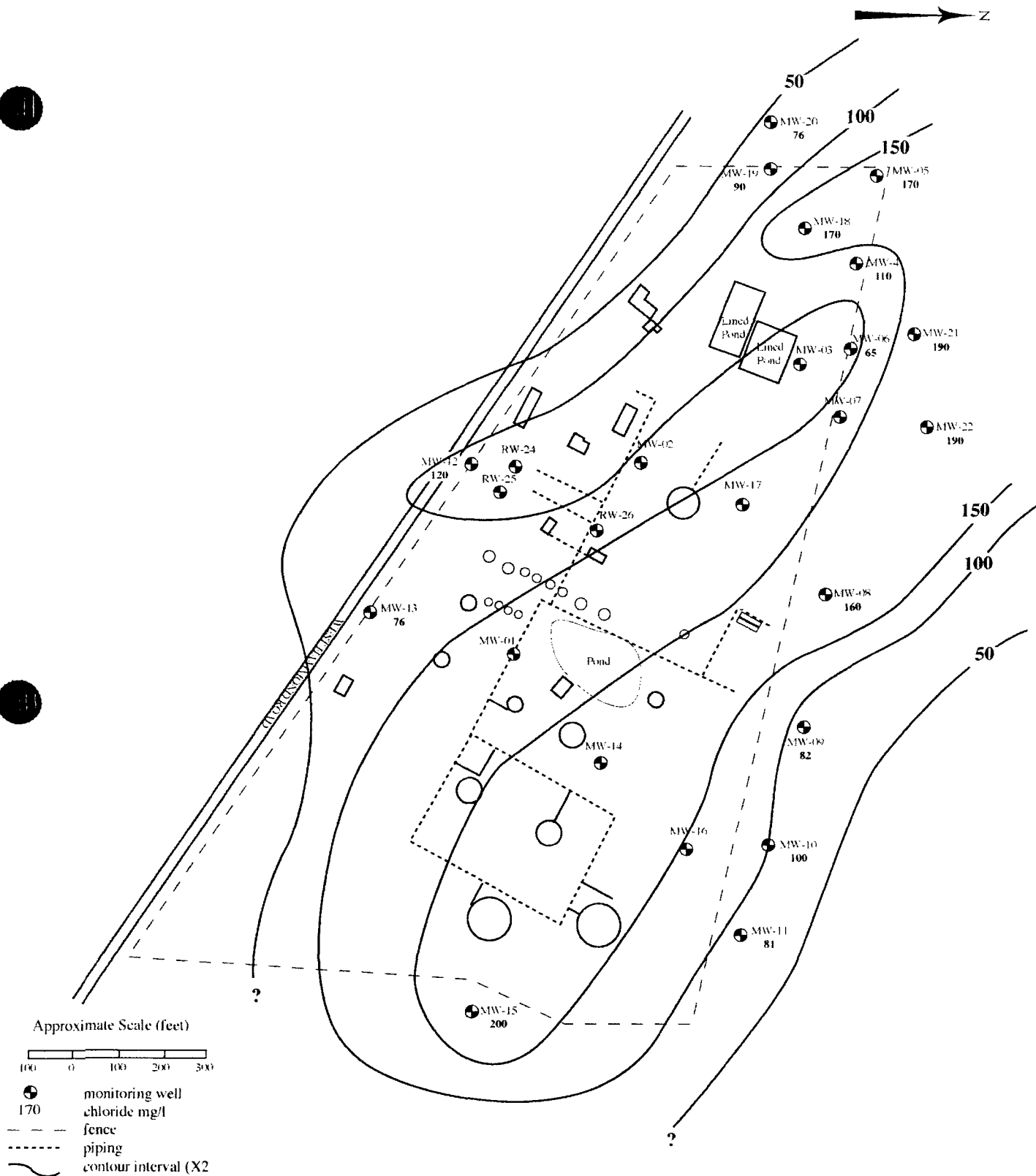
- monitoring well
- fence
- piping
- concentrations in ppb
- contour interval (X2)

taken from Bio/Tech April 3, 2000

DRAWN BY: G. Billings	Figure 3	 BILLINGS & ASSOCIATES, INC. Environmental Engineering & Consulting 2200 West 10th Street, Suite 100 Bloomfield, NM 87403
DATE: 2/5/2003	MTBE Contour (11/12/2002)	
CASE NO:	Site Name: Thriftway Refinery	
UST FACILITY NO:	Site Location: 626 RD 5500	
	Bloomfield, NM	



DRAWN BY: G. Billings	Figure 4	BILLINGS & ASSOCIATES, INC.
DATE: 2/05/2002	Conductivity Contour (11/12/2002)	
CASE NO:	Site Name: Thriftway Refinery	
UST FACILITY NO:	Site Location: 626 RD 5500	
	Bloomfield, NM	



taken from BioTech April 3, 2000

DRAWN BY: G. Billings	Figure 4 A	BILLINGS & ASSOCIATES, INC.
DATE: 2/5/2003	Chloride Contour (12/2002)	
CASE NO:	Site Name: Thriftway Refinery	
UST FACILITY NO:	Site Location: 626 RD 5500	
	Bloomfield, NM	

TABLE 1-A
THRIFTWAY REFINERY
SUMMARY OF GROUNDWATER MONITOR DATA (MOST RECENT)

Well	Date	Time	A/O	O/W	Product Thick	pH	umhos/cm	NTU	DO mg/l	Deg C.	Salinity %	TDs g/L	ORP mv	Purged
MW-01	2.01.02	1244	14.78	14.78										
	2.04.02	1218	9.17	9.18	0.01									
	7.29.02	1629	14.99	14.99										monitor only
MW-02	2.01.02	1133	11.91	11.91										monitor only
	7.29.02	1531	11.97	11.97										monitor only
MW-03	2.01.02	1105	6.03	6.03										monitor only
	7.29.02	1510	5.3	6.73	1.43									monitor only
MW-04	5.02.01	1355	4.96	4.96		6.9	1.41	211	2.15	18	0.8	9	-62	5
	7.30.01	1550	5.72	5.72		7	1.56	OR	11.54	25	0.9	10	-9	6
	1.30.02	1501	5.37	5.37										P
	7.25.02	1452	5.7	5.7		7.3	2.54		1.34	84			6.5	P
	11.21.02	1057	5.17	5.17		7.5	1.41		1.8	53.4				P
MW-05	1.30.02	1523	5.33	5.33										P
	7.25.02	1437	5.73	5.73		7.81	4.78		1.18	69			-30.1	P
	11.21.02	939	5.43	5.43										
MW-06	5.03.01	1026	5.15	5.15		7.3	1.35	87	5.33	12.7	0.8	9	148	5
	7.30.01	1537	5.86	5.86		7.1	1.57	14	14.21	20.5	0.9	10	-20	6
	1.30.02	1547	5.22	5.22										P
	7.25.02	1010	5.39	5.39		7.2	3.26							
	11.21.02	1317	4.86	4.86		7.5	3.24		0.86	60.8				P
MW-07	2.01.02	1042	5.32	5.32										monitor only
	7.29.02	1505	6.11	6.11										monitor only
MW-08	5.30.01	954	4.05	4.05		7.1	1.79	219	4.57	11.9	1	11	49	5.2
	7.30.01	1515	5.86	5.86		7	2.61	131	13.34	23.9	1.6	16	171	6
	1.31.02	1042	5.32	5.32					0.36	73.3				P
	7.26.02	1246	5.84	5.84		7.3	6.49		1.24	74.2				P
	11.22.02	935	3.9	3.9		6.8	3.97		0.47	55.6				P
MW-09	1.30.02													well not found
	7.26.02													well not found
MW-10	11.21.02	1601	5.37	5.37		7.5	5.8		0.91	58.3				P
	1.31.02	1102	5.21	5.21										P
	7.26.02	1259	5.62	5.62		7.4	5.51		1.37	74.4				P
	11.21.02	1424	5.32	5.32		7.3	4.63		0.97	59.1				P

TABLE 1-A
THRIFTWAY REFINERY
SUMMARY OF GROUNDWATER MONITOR DATA (MOST RECENT)

Well	Date	Time	A/O	O/W	Product Thick	pH	umhos/cm	NTU	DO mg/l	Deg C.	Salinity %	TDs g/L	ORP mv	Purged
MW-11	1.31.02	1121	5.71	5.71										P
	7.26.02	1310	6.29	6.29		7.4	5.06		1.58	69.8				P
	11.21.02	1440	6.01	6.01		7.39	4.48		0.85	60.3				P
MW-12	1.31.02	1452	14.09	14.09										P
	7.26.02	1121	14.35	14.35		7	3.08		2.74	75.3				P
	12.03.02	1241	14.34	14.34		6.93	4.01		1.21	54.4				P
MW-13	5.03.01	1055	16.59	16.59		7	2.33	85	1.83	14.3	1.4	14	164	5
	7.31.01	925	17.19	17.19		7.8	2.4	30	16.07	16.4	1.5	15	190	17.5
	1.31.02	1430	17.25	17.25										P
MW-14	7.26.02	1106	17.54	17.54		7.2	5.51		0.47	66				P
	12.3.02	1155	17.51	17.51		7.3	3.09		0.98	51.6				P
														monitor only
MW-15	2.01.02	1239	12.22	12.22										monitor only
	7.29.02	1636	12.39	13.29										
	5.03.01	1135	11.89	11.89		7.3	2.21	145	4.2	12.1	1	10	50	1.4
MW-16	01.31.02	1142	12.49	12.49										P
	7.26.02	1328	12.69	12.69		7.7	2.69		1.04	78.4				P
	12.03.02	1335	12.69	12.69		7.55	3.55		1.5	53.9				P
MW-17	2.01.02	1300	5.78	5.78										well not found
	7.26.02													well not found
	2.01.02	1118	5.78	5.78										monitor only
MW-18	7.29.02	1520	5.96	5.96										monitor only
	5.02.01	1337	4.32	4.32		7.1	1.46	OR	4.26	17.9	0.8	9	-84	5.2
	7.31.01	857	4.84	4.84		7.9	1.44	OR	12.55	19.7	0.09	9	-104	5
MW-19	1.30.02	1418	4.61	4.61										P
	7.25.02	1354	4.79	4.79		3.91	3.91		0.33	72.02			-35.6	P
	11.20.02	1419	4.27	4.27		2.97	1.17			58.5				P
MW-20	1.31.02	925	5.87	5.87										
	7.25.02	1416	4.35	4.35		7.05	5.74		1.01	74.92				P
	11.20.02	1547	3.75	3.75		7.2	1.41		1.22	56.9				P
MW-21	1.31.02	947	6.04	6.04										P
	7.26.02	1158	6.31	6.31		7.2	2.95		1.22	79.6				P
	11.20.02	1136	5.85	5.85		7.1	1.9		0.3	55				P

TABLE 1-A
THRIFTWAY REFINERY
SUMMARY OF GROUNDWATER MONITOR DATA (MOST RECENT)

Well	Date	Time	A/O	O/W	Product Thick	pH	umhos/cm	NTU	DO mg/l	Deg C.	Salinity %	TDs g/L	ORP mv	Purged
MW-21	1.30.02	1007	3.41	3.41										P
	7.26.02	1220	4.15	4.15										
	11.22.02	1120	3.51	3.51		7.1	7.58?		0.55	55				P
MW-22	5.02.01	1438	4.01	4.01										
	7.31.01	1454	5.25	5.25										
	1.31.02	1026	4.55	4.55										
	7.26.02	1231	4.93	4.93										P
	11.22.02	1029	4.21	4.21										P
MW-23	2.01.02	1211	DRY	DRY										
	7.29.02	1551	DRY	DRY										
MW-24	2.01.02	1201	16.05	16.05										monitor only
	7.29.02	1544	15.37	15.37										monitor only
MW-25	2.01.02	1158	15.33	15.33										monitor only
	7.29.02	1549	16.15	16.15										monitor only
MW-27	2.01.02	1214	DRY	DRY										
	7.29.02	1553	DRY	DRY										
MW-28	2.01.02	1227	15.95	15.95										monitor only
	7.29.02	1556	15.97	15.97										monitor only
MW-29	2.02.02	1216	15.19	15.19										monitor only
	7.29.02	1605	15.3	15.3										monitor only
RW-24	2.01.02	1151	16.17	16.17										monitor only
	7.29.02	1600	15.78	15.78										monitor only
RW-25	2.01.02	1154	16.45	16.45										monitor only
	7.29.02	1602	16.55	16.55										monitor only
RW-26	2.01.02	1142	14.65	14.65										monitor only
	7.29.02	1540	14.11	14.11	0.88									monitor only
T-17-1	2.01.02	1230	17.6	17.6										monitor only
	7.29.02	1615	17.73	17.73										monitor only
T-17-3	2.01.02	1232												monitor only
	7.29.02													well destroyed

**TABLE 2-A
THRIFTWAY REFINERY
SUMMARY OF GROUNDWATER BENZENE & MTBE**

	Date	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
Influent (refinery)	5.30.01	200	940	79	290	920
	7.31.01	250	1600	210	520	1610
	11.01.01	270	1200	430	430	1290
	12.4.01		520	240	430	1130
	1.31.02	200	520	120	360	850
	2.28.02	150	890	90	370	1030
	3.29.02	130	690	51	300	879
	4.26.02	310	950	81	310	899
	5.22.02	270	900	63	290	817
	6.24.02	200	770	200	350	158
	8.27.02	170	1500	120	370	800
	9.30.02	110	1200	2200	990	850
	10.29.02	82	310	59	220	380
	11.29.02	86	340	150	260	470
	12.30.02	120	290	280	244	430
Effluent(refinery)	5.30.01	5.6	<0.50	<0.50	<0.50	<1.50
	7.31.01	<1.00	0.9	<0.50	<0.50	1.1
	11.01.01	21	4.7	10	3.9	18.5
	12.04.01		<0.50	<0.50	0.6	<1.50
	1.31.02	2.3	0.8	5.1	1.8	8.5
	3.29.02	6.3	1.6	ND	ND	ND
	4.26.02	14	0.7	1	ND	ND
	5.22.02	97	2.9	5.5	0.9	3.7
	6.24.02	24	0.6	0.5	2.1	4
	8.27.02	16	0.6	0.8	ND	1.3
	9.30.02	7.5	ND	0.6	0.6	1.1
	10.29.02	ND	ND	ND	ND	ND
	11.29.02	ND	ND	ND	ND	ND
	12.30.02	ND	ND	2.2	1.3	4.9
MW-01	2.4.02	Product				
MW-04	7.25.02	31	7.9	ND	0.9	0.6
	11.26.02	18	6.1	ND	ND	1.1
MW-05	1.30.02	43	5.1	<0.50	<0.50	<1.50
	7.25.02	51	4.7	ND	ND	ND
	11.26.02	47	5.1	ND	ND	ND
MW-06	1.30.02	2.5	<0.50	<0.50	<0.50	<1.50
	7.26.02	23	3.4	0.7	0.5	ND
	11.26.02	30	ND	ND	ND	ND
MW-08	1.30.02	<1.00	<0.05	<0.50	<0.50	<1.50
	7.26.02	1.4	ND	ND	ND	ND
	11.26.02	230	0.9	ND	ND	ND
MW-09	1.30.02	26	5.5	1.6	1.7	<1.50
	11.26.02	ND	ND	ND	ND	ND
MW-10	7.26.02	ND	ND	ND	ND	ND
	11.26.02	ND	ND	ND	ND	ND
MW-11	1.30.02	<1.00	<0.50	<0.50	<0.50	<1.50
	7.26.02	ND	ND	ND	ND	ND
	11.26.02	ND	ND	0.6	ND	ND
MW-12	1.30.02	110	28	1.8	54	104.6
	7.26.02	140	43	1.7	59	115.1
	12.03.02	120	12	ND	24	35

**TABLE 2-A
THRIFTWAY REFINERY
SUMMARY OF GROUNDWATER BENZENE & MTBE**

	Date	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
MW-13	1.30.02	<1.00	<0.50	<0.50	<0.50	<1.50
	7.26.02	ND	ND	ND	ND	ND
	12.03.02	ND	ND	ND	ND	ND
MW-15	1.30.02	<1.00	<0.50	<0.50	<0.50	<1.50
	7.26.02	ND	ND	ND	ND	ND
	12.03.02	ND	ND	ND	ND	ND
MW-18	1.30.02	18	1	<0.50	<0.50	<1.50
	7.25.02	36	6.9	ND	1.1	0.7
	11.26.02	33	5	ND	ND	ND
MW-19	1.30.02	530	0.6	0.9	0.8	<1.50
	7.25.02	610	ND	ND	0.9	ND
	11.26.02	310	ND	ND	ND	ND
MW-20	1.30.02	670	1.6	3.7	6.3	1.2
	7.26.02	950	ND	ND	ND	ND
	11.26.02	350	1.6	ND	ND	2
MW-21	1.30.02	44	<0.50	<0.50	<0.50	<1.50
	7.26.02	34	ND	ND	ND	ND
	11.26.02	34	1.4	ND	ND	ND
MW-22	1.30.02	12	<0.50	<0.50	<0.50	<1.50
	7.26.02	14	ND	ND	ND	ND
	11.26.02	14	ND	ND	ND	ND

APPENDIX A
Air stripper/influent/effluent Laboratory Analyses
QA/QC Data and COC records

OFF: (505) 325-5667
FAX: (505) 327-1496



Lab test 2/04/03 for

LAB: (505) 325-1556
FAX: (505) 327-1496

April 06, 2002

Terry Griffin
BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
TEL: (505) 327-4965
FAX: (505) 564-3604

RE: Thriftway Refinery Air Stripper

Order No.: 0203048

Dear Terry Griffin,

On Site Technologies, LTD. received 2 samples on 03/29/2002 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

David Cox

P.O. BOX 2606 • FARMINGTON, NM 87499

EMAIL: ONSITE@ONSITELTD.COM

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

On Site Technologies, LTD.

Date: 06-Apr-02

CLIENT: BioTech Remediation, Inc.
Project: Thriftway Refinery Air Stripper
Lab Order: 0203048

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

OFF: (505) 325-5667
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LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 06-Apr-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Air Stripper
Work Order:	0203048	Client Sample ID:	Influent
Lab ID:	0203048-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery Air Stripper	Collection Date:	03/29/2002 12:25:00 PM
		COC Record:	11761

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DWC		
Methyl tert-Butyl Ether	130	10		µg/L	10	04/02/2002
Benzene	690	5		µg/L	10	04/02/2002
Toluene	51	5		µg/L	10	04/02/2002
Ethylbenzene	300	5		µg/L	10	04/02/2002
m,p-Xylene	780	10		µg/L	10	04/02/2002
o-Xylene	99	5		µg/L	10	04/02/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667
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LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 06-Apr-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Air Stripper
Work Order:	0203048	Client Sample ID:	Effluent
Lab ID:	0203048-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery Air Stripper	Collection Date:	03/29/2002 12:30:00 PM
		COC Record:	11761

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DWC		
Methyl tert-Butyl Ether	6.3	1		µg/L	1	04/02/2002
Benzene	1.6	0.5		µg/L	1	04/02/2002
Toluene	ND	0.5		µg/L	1	04/02/2002
Ethylbenzene	ND	0.5		µg/L	1	04/02/2002
m,p-Xylene	ND	1		µg/L	1	04/02/2002
o-Xylene	ND	0.5		µg/L	1	04/02/2002

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted precision limits

E - Value above quantitation range

Surr: - Surrogate

2 of 2

P.O. BOX 2606 • FARMINGTON, NM 87499

EMAIL: ONSITE@ONSITELTD.COM

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 06-Apr-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0203048

Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT

Method Blank

Sample ID: MB_020402	Batch ID: GC-1_020402	Test Code: SW8021B	Units: µg/L	Analysis Date: 04/02/2002	Prep Date:						
Client ID:	0203048	Run ID:	GC-1_020402A	SeqNo: 49262							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	.1005	1									J
o-Xylene	ND	0.5									
Toluene	.0807	0.5									J
1,4-Difluorobenzene	106.3	0									
4-Bromochlorobenzene	120.5	0									
Fluorobenzene	107.1	0									

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 06-Apr-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0203048

Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0203045-01AMS	Batch ID: GC-1_020402	Test Code: SW8021B	Units: µg/L	Analysis Date: 04/02/2002	Prep Date:						
Client ID: 0203048	Run ID: GC-1_020402A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result										
Benzene	899	10	800	138.2	95.1%	70	130				
Ethylbenzene	2655	10	800	1857	99.8%	70	130				
m,p-Xylene	4030	20	1600	2323	106.7%	70	130				
Methyl tert-Butyl Ether	783.4	20	800	0	97.9%	70	130				
o-Xylene	765.8	10	800	12.23	94.2%	70	130				
Toluene	763.5	10	800	11.76	94.0%	70	130				
1,4-Difluorobenzene	2077	0	2200	0	94.4%	70	130				
4-Bromochlorobenzene	2450	0	2200	0	111.4%	70	130				
Fluorobenzene	2094	0	2200	0	95.2%	70	130				

Sample ID: 0203045-01AMSD		Batch ID: GC-1_020402		Test Code: SW8021B		Units: µg/L		Analysis Date: 04/02/2002		Prep Date:	
Client ID: 0203048		Run ID: 0203048		GC-1_020402A				SeqNo: 49264			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	873.7	10	800	138.2	91.9%	70	130	899	2.9%	15	
Ethylbenzene	2582	10	800	1857	90.7%	70	130	2655	2.8%	15	
m,p-Xylene	3922	20	1600	2323	100.0%	70	130	4030	2.7%	15	
Methyl tert-Butyl Ether	787.2	20	800	0	98.4%	70	130	783.4	0.5%	15	
o-Xylene	750.1	10	800	12.23	92.2%	70	130	765.8	2.1%	15	
Toluene	745.8	10	800	11.76	91.8%	70	130	763.5	2.4%	15	
1,4-Difluorobenzene	2078	0	2200	0	94.5%	70	130	0	0.0%	0	
4-Bromochlorobenzene	2466	0	2200	0	112.1%	70	130	0	0.0%	0	
Fluorobenzene	2108	0	2200	0	95.8%	70	130	0	0.0%	0	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 06-Apr-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0203048

Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS_020402	Batch ID: GC-1_020402	Test Code: SW8021B	Units: µg/L	Analysis Date: 04/02/2002	Prep Date:
Client ID: 0203048	Run ID: GC-1_020402A	PQL	SPK value	SPK Ref Val	SeqNo: 49261
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	37.4	0.5	40	0	93.5% 80 120
Ethylbenzene	38.77	0.5	40	0	96.9% 80 120
m,p-Xylene	77.13	1	80	0	96.4% 80 120
Methyl tert-Butyl Ether	39.48	1	40	0.1005	98.5% 80 120
o-Xylene	38.1	0.5	40	0	95.2% 80 120
Toluene	36.95	0.5	40	0.0807	92.2% 80 120
1,4-Difluorobenzene	105.4	0	110	0	95.8% 70 130
4-Bromochlorobenzene	121.7	0	110	0	110.7% 70 130
Fluorobenzene	106	0	110	0	96.3% 70 130

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 06-Apr-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0203048

Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1_020402	Batch ID: GC-1_020402	Test Code: SW8021B	Units: µg/L	Analysis Date: 04/02/2002				Prep Date:			
Client ID:	Run ID:	GC-1_020402A		SeqNo:							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.66	0.5	20	0	98.3%	85	115				
Ethylbenzene	20.3	0.5	20	0	101.5%	85	115				
m,p-Xylene	40.57	1	40	0	101.4%	85	115				
Methyl tert-Butyl Ether	20.21	1	20	0	101.1%	85	115				
o-Xylene	19.78	0.5	20	0	98.9%	85	115				
Toluene	19.33	0.5	20	0	96.7%	85	115				
1,4-Difluorobenzene	106.1	0	110	0	96.5%	70	130				
4-Bromochlorobenzene	122.3	0	110	0	111.2%	70	130				
Fluorobenzene	106.5	0	110	0	96.8%	70	130				

Sample ID: CCV2_020402		Batch ID: GC-1_020402		Test Code: SW8021B		Units: µg/L		Analysis Date: 04/02/2002		Prep Date:	
Client ID:		0203048		Run ID:		GC-1_020402A		SeqNo: 49259			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.4	0.5	20	0	97.0%	85	115				
Ethylbenzene	19.96	0.5	20	0	99.8%	85	115				
m,p-Xylene	39.84	1	40	0	99.6%	85	115				
Methyl tert-Butyl Ether	20.22	1	20	0	101.1%	85	115				
o-Xylene	19.53	0.5	20	0	97.6%	85	115				
Toluene	19.1	0.5	20	0	95.5%	85	115				
1,4-Difluorobenzene	105.5	0	110	0	95.9%	70	130				
4-Bromochlorobenzene	124	0	110	0	112.8%	70	130				
Fluorobenzene	106.5	0	110	0	96.8%	70	130				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT:

BioTech Remediation, Inc.

Work Order:

0203048

Project:

Thriftway Refinery Air Stripper

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3_020402	Batch ID: GC-1_020402	Test Code: SW8021B	Units: µg/L	Analysis Date: 04/02/2002		Prep Date:					
Client ID:	0203048	Run ID: GC-1_020402A		SeqNo: 49260							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.17	0.5	40	0	95.4%	85	115				
Ethylbenzene	39.55	0.5	40	0	98.9%	85	115				
m,p-Xylene	78.4	1	80	0	98.0%	85	115				
Methyl tert-Butyl Ether	39.72	1	40	0	99.3%	85	115				
o-Xylene	38.79	0.5	40	0	97.0%	85	115				
Toluene	37.79	0.5	40	0	94.5%	85	115				
1,4-Difluorobenzene	104.8	0	110	0	95.2%	70	130				
4-Bromochlorobenzene	123.3	0	110	0	112.1%	70	130				
Fluorobenzene	105.7	0	110	0	96.1%	70	130				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 06-Apr-02

CLIENT: BioTech Remediation, Inc.
Work Order: 0203048
Project: Thriftway Refinery Air Stripper
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

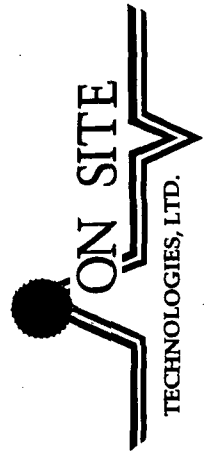
Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0203045-01A	95.1	111	96.5					
0203045-01AMS	94.4	111	95.2					
0203045-01AMSD	94.4	112	95.8					
0203045-03A	97.2	111	97.9					
0203046-10A	94.3	109	96					
0203046-11A	94.4	112	95.2					
0203046-12A	96.6	112	97.5					
0203046-13A	97	112	97.9					
0203046-14A	96.2	111	97.8					
0203048-01A	93.8	110	94.5					
0203048-02A	96.9	113	98.1					
CCV1_020402	96.5	111	96.8					
CCV2_020402	95.9	113	96.8					
CCV3_020402	95.2	112	96					
LCS_020402	95.8	111	96.3					
MB_020402	96.6	110	97.4					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

CHAIN OF CUSTODY RECORD



612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
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[illegible]

OFF: (505) 325-5667
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LAB: (505) 325-1556
FAX: (505) 327-1496

May 02, 2002

Terry Griffin
BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
TEL: (505) 327-4965
FAX: (505) 564-3604

*For Terry
4/6/03*

RE: Thriftway Refinery Bloomfield, NM

Order No.: 0204036

Dear Terry Griffin,

On Site Technologies, LTD. received 3 samples on 04/26/2002 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

David Cox

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

On Site Technologies, LTD.

Date: 02-May-02

CLIENT: BioTech Remediation, Inc.
Project: Thriftway Refinery Bloomfield, NM
Lab Order: 0204036

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

OFF: (505) 325-5667
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LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 02-May-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0204036	Client Sample ID:	Travel Blank
Lab ID:	0204036-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery Bloomfield, NM	Collection Date:	04/26/2002 8:32:00 AM
		COC Record:	11721

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	15	1		µg/L	1	05/01/2002
Benzene	1.8	0.5		µg/L	1	05/01/2002
Toluene	2.4	0.5		µg/L	1	05/01/2002
Ethylbenzene	0.7	0.5		µg/L	1	05/01/2002
m,p-Xylene	3	1		µg/L	1	05/01/2002
o-Xylene	0.8	0.5		µg/L	1	05/01/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Sur: - Surrogate

1 of 1

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EMAIL: ONSITE@ONSITELTD.COM

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OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 02-May-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0204036	Client Sample ID:	Influent
Lab ID:	0204036-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery Bloomfield, NM	Collection Date:	04/26/2002 8:59:00 AM
		COC Record:	11721

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	310	10		µg/L	10	05/01/2002
Benzene	950	5		µg/L	10	05/01/2002
Toluene	81	5		µg/L	10	05/01/2002
Ethylbenzene	310	5		µg/L	10	05/01/2002
m,p-Xylene	800	10		µg/L	10	05/01/2002
o-Xylene	99	5		µg/L	10	05/01/2002

Qualifiers:

- PQL - Practical Quantitation Limit
- ND - Not Detected at Practical Quantitation Limit
- J - Analyte detected below Practical Quantitation Limit
- B - Analyte detected in the associated Method Blank

- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted precision limits
- E - Value above quantitation range
- Surr: - Surrogate

1 of 1

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

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FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 02-May-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0204036	Client Sample ID:	Effluent
Lab ID:	0204036-03A	Matrix:	AQUEOUS
Project:	Thriftway Refinery Bloomfield, NM	Collection Date:	04/26/2002 9:05:00 AM
		COC Record:	11721

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	14	1		µg/L	1	05/01/2002
Benzene	0.7	0.5		µg/L	1	05/01/2002
Toluene	1	0.5		µg/L	1	05/01/2002
Ethylbenzene	ND	0.5		µg/L	1	05/01/2002
m,p-Xylene	ND	1		µg/L	1	05/01/2002
o-Xylene	ND	0.5		µg/L	1	05/01/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

EMAIL: ONSITE@ONSITELTD.COM

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 02-May-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0204036

Project: Thriftway Refinery Bloomfield, NM

QC SUMMARY REPORT

Method Blank

Sample ID: MB1_020502	Batch ID: GC-1_020501	Test Code: SW8021B	Units: µg/L	Analysis Date: 05/01/2002	Prep Date: 05/01/2002
Client ID:	0204036	Run ID: GC-1_020501B		SeqNo: 49992	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Limit RPD Ref Val Qual
Benzene	ND	0.5			
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
Methyl tert-Butyl Ether	.5716	1			J
o-Xylene	ND	0.5			
Toluene	.099	0.5			J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 0204036
Project: Thriftway Refinery Bloomfield, NM

Date: 02-May-02

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0204022-05AMS		Batch ID: GC-1_020501		Test Code: SW8021B		Units: µg/L		Analysis Date: 05/01/2002		Prep Date: 05/01/2002	
Client ID:		0204036		Run ID:		GC-1_020501B		SeqNo: 49993			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	695.8	5	400	316.4	94.8%	70	130				
Ethylbenzene	509.8	5	400	121.5	97.1%	70	130				
m,p-Xylene	901.7	10	800	132.8	96.1%	70	130				
Methyl tert-Butyl Ether	577	10	400	160.4	104.1%	70	130				
o-Xylene	385.9	5	400	4.579	95.3%	70	130				
Toluene	378.2	5	400	4.14	93.5%	70	130				

Sample ID: 0204022-05AMSD		Batch ID: GC-1_020501		Test Code: SW8021B		Units: µg/L		Analysis Date: 05/01/2002		Prep Date: 05/01/2002	
Client ID:		0204036		Run ID:		GC-1_020501B		SeqNo: 49994			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	680.1	5	400	316.4	90.9%	70	130	695.8	2.3%	15	
Ethylbenzene	499	5	400	121.5	94.4%	70	130	509.8	2.1%	15	
m,p-Xylene	883.4	10	800	132.8	93.8%	70	130	901.7	2.1%	15	
Methyl tert-Butyl Ether	569.8	10	400	160.4	102.3%	70	130	577	1.3%	15	
o-Xylene	378.4	5	400	4.579	93.5%	70	130	385.9	2.0%	15	
Toluene	370	5	400	4.14	91.5%	70	130	378.2	2.2%	15	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 02-May-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0204036

Project: Thriftway Refinery Bloomfield, NM

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS_020502	Batch ID: GC-1_020501	Test Code: SW8021B	Units: µg/L	Analysis Date: 05/01/2002	Prep Date: 05/01/2002						
Client ID: 0204036	Run ID: GC-1_020501B			SeqNo: 49991							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.43	0.5	40	0	93.6%	80	120				
Ethylbenzene	38.41	0.5	40	0	96.0%	80	120				
m,p-Xylene	75.49	1	80	0	94.4%	80	120				
Methyl tert-Butyl Ether	41.01	1	40	0.5716	101.1%	80	120				
o-Xylene	38.12	0.5	40	0	95.3%	80	120				
Toluene	36.92	0.5	40	0.099	92.1%	80	120				

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 0204036
Project: Thriftway Refinery Bloomfield, NM

Date: 02-May-02

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1_020502	Batch ID: GC-1_020501	Test Code: SW8021B	Units: µg/L	Analysis Date: 05/01/2002	Prep Date: 05/01/2002						
Client ID:	0204036	Run ID: GC-1_020501B		SeqNo: 49989							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.72	0.5	20	0	93.6%	85	115				
Ethylbenzene	19.3	0.5	20	0	96.5%	85	115				
m,p-Xylene	37.77	1	40	0	94.4%	85	115				
Methyl tert-Butyl Ether	20.67	1	20	0	103.4%	85	115				
o-Xylene	19.32	0.5	20	0	96.6%	85	115				
Toluene	18.47	0.5	20	0	92.4%	85	115				
1,4-Difluorobenzene	105	0	110	0	95.5%	70	130				
4-Bromochlorobenzene	120.1	0	110	0	109.2%	70	130				
Fluorobenzene	106.3	0	110	0	96.6%	70	130				

Sample ID: CCV2_020502	Batch ID: GC-1_020501	Test Code: SW8021B	Units: µg/L	Analysis Date: 05/01/2002		Prep Date: 05/01/2002					
Client ID:	Run ID:	GC-1_020501B		SeqNo:	49990						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.79	0.5	20	0	93.9%	85	115				
Ethylbenzene	19.09	0.5	20	0	95.4%	85	115				
m,p-Xylene	37.2	1	40	0	93.0%	85	115				
Methyl tert-Butyl Ether	20.64	1	20	0	103.2%	85	115				
o-Xylene	18.97	0.5	20	0	94.8%	85	115				
Toluene	18.31	0.5	20	0	91.5%	85	115				
1,4-Difluorobenzene	105.2	0	110	0	95.6%	70	130				
4-Bromochlorobenzene	120.9	0	110	0	109.9%	70	130				
Fluorobenzene	106.3	0	110	0	96.6%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 0204036
Project: Thriftway Refinery Bloomfield, NM
Test No: SW8021B

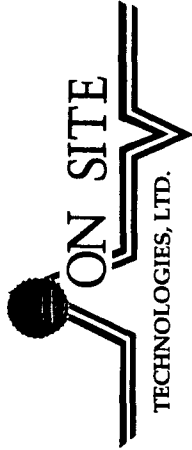
QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0204022-05A	95.8	109	96					
0204022-05AMS	95.8	110	95.6					
0204022-05AMSD	95.9	109	95.4					
0204022-06A	96.3	110	96					
0204036-01A	96	109	97.5					
0204036-02A	88.9	95.4	85.8					
0204036-03A	96	110	97.4					
0204037-01A	95.8	109	97.3					
0204037-02A	96.3	110	97.4					
CCV1_020502	95.5	109	96.6					
CCV2_020502	95.6	110	96.6					
LCS_020502	95.2	109	96.1					
MB1_020502	96.6	119	97					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits



CHAIN OF CUSTODY RECORD

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Purchase Order No.:		Project No. 810	
Name: <u>TECHNICAL</u>		Title:	
Company: <u>BIOTECH REGENERATION INC.</u>		Company:	
Address: <u>105 AIRPORT DR. SUITE 104</u>		Mailing Address:	
City, State, Zip: <u>FARMINGTON, N.M. 87401</u>		City, State, Zip:	
Telephone No.:		Telephone No.:	
Fax No.:		Fax No.:	
PROJECT LOCATION:		ANALYSIS REQUESTED	
SAMPLER'S SIGNATURE: <u>[Signature]</u>		Containers	
SAMPLE IDENTIFICATION		LAB ID	
DATE	TIME	MATRIX	PRES.
4-26-03	0832	H2O	HCL
"	0859	"	"
"	0905	"	"
RELINQUISHED BY: <u>[Signature]</u>		Received by: <u>[Signature]</u>	
Date/Time: <u>4-26-03</u>		Date/Time: <u>4/26/03 1030</u>	
RELINQUISHED BY:		Date/Time:	
RELINQUISHED BY:		Date/Time:	
Method of Shipment:		Rush	
		24-48 Hours	
		10 Working Days	
		By Date:	
Authorized by: _____		Special Instructions / Remarks: <u>NOV 11 11:00 AM '03</u>	
(Client Signature Must Accompany Request)		Date: _____	

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

June 03, 2002

Terry Griffin
BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
TEL: (505) 327-4965
FAX: (505) 564-3604

*For Terry
2/24/03*

RE: Thriftway Refinery Bloomfield, NM

Order No.: 0205036

Dear Terry Griffin,

On Site Technologies, LTD. received 2 samples on 05/22/2002 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to be "DC" or "D Cox", written in a cursive style.

David Cox

P.O. BOX 2606 • FARMINGTON, NM 87499

EMAIL: ONSITE@ONSITELTD.COM

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

On Site Technologies, LTD.

Date: 03-Jun-02

CLIENT: BioTech Remediation, Inc.
Project: Thriftway Refinery Bloomfield, NM
Lab Order: 0205036

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 03-Jun-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0205036	Client Sample ID:	Influent
Lab ID:	0205036-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery Bloomfield, NM	Collection Date:	05/22/2002 9:26:00 AM
		COC Record:	11716

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	270	10		µg/L	10	05/24/2002
Benzene	900	5		µg/L	10	05/24/2002
Toluene	63	5		µg/L	10	05/24/2002
Ethylbenzene	290	5		µg/L	10	05/24/2002
m,p-Xylene	750	10		µg/L	10	05/24/2002
o-Xylene	67	5		µg/L	10	05/24/2002

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range
Surrogate - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 03-Jun-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0205036	Client Sample ID:	Effluent
Lab ID:	0205036-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery Bloomfield, NM	Collection Date:	05/22/2002 9:30:00 AM
		COC Record:	11716

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	97	1		µg/L	1	05/24/2002
Benzene	2.9	0.5		µg/L	1	05/24/2002
Toluene	5.5	0.5		µg/L	1	05/24/2002
Ethylbenzene	0.9	0.5		µg/L	1	05/24/2002
m,p-Xylene	2.7	1		µg/L	1	05/24/2002
o-Xylene	1	0.5		µg/L	1	05/24/2002

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted precision limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

EMAIL: ONSITE@ONSITELTD.COM

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 03-Jun-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0205036

Project: Thriftway Refinery Bloomfield, NM

QC SUMMARY REPORT

Method Blank

Sample ID: MB_020524	Batch ID: GC-1_020524	Test Code: SW8021B	Units: µg/L	Analysis Date: 05/24/2002	Prep Date: 05/24/2002
Client ID: 0205036	Run ID: GC-1_020524A	PQL	SPK value	SeqNo: 50698	
Analyte	Result	PQL	SPK Ref Val	LowLimit	HighLimit
Benzene	ND	0.5			
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
Methyl tert-Butyl Ether	ND	1			
o-Xylene	ND	0.5			
Toluene	.0967	0.5			
			%REC	LowLimit	HighLimit
			RPD Ref Val	%RPD	RPDLimit
					Qual

J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 0205036
Project: Thriftway Refinery Bloomfield, NM

Date: 03-Jun-02

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0205020-24AMS		Batch ID: GC-1_020524	Test Code: SW8021B	Units: µg/L	Analysis Date: 05/24/2002		Prep Date: 05/24/2002	
Client ID: 0205036		Run ID: GC-1_020524A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte		Result					RPD Limit	RPD Ref Val
Benzene		188.2	2.5	200	0.439	93.9%	70	130
Ethylbenzene		194.6	2.5	200	0.3955	97.1%	70	130
m,p-Xylene		385.3	5	400	0.484	96.2%	70	130
Methyl tert-Butyl Ether		407.9	5	200	206	100.9%	70	130
o-Xylene		189.3	2.5	200	0.2685	94.5%	70	130
Toluene		187.3	2.5	200	0.651	93.3%	70	130

Sample ID: 0205020-24AMSD		Batch ID: GC-1_020524	Test Code: SW8021B	Units: µg/L	Analysis Date: 05/24/2002		Prep Date: 05/24/2002	
Client ID: 0205036		Run ID: GC-1_020524A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte		Result					RPD Limit	RPD Ref Val
Benzene		182.7	2.5	200	0.439	91.1%	70	130
Ethylbenzene		189.2	2.5	200	0.3955	94.4%	70	130
m,p-Xylene		375.4	5	400	0.484	93.7%	70	130
Methyl tert-Butyl Ether		408.2	5	200	206	101.1%	70	130
o-Xylene		185.2	2.5	200	0.2685	92.5%	70	130
Toluene		182.2	2.5	200	0.651	90.8%	70	130

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 03-Jun-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0205036

Project: Thriftway Refinery Bloomfield, NM

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS_020524	Batch ID: GC-1_020524	Test Code: SW8021B	Units: µg/L	Analysis Date: 05/24/2002	Prep Date: 05/24/2002						
Client ID: 0205036	Run ID: GC-1_020524A			SeqNo: 50697							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.64	0.5	40	0	94.1%	80	120				
Ethylbenzene	38.29	0.5	40	0	95.7%	80	120				
m,p-Xylene	75.82	1	80	0	94.8%	80	120				
Methyl tert-Butyl Ether	39.34	1	40	0	98.3%	80	120				
o-Xylene	37.45	0.5	40	0	93.6%	80	120				
Toluene	36.91	0.5	40	0.0967	92.0%	80	120				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 03-Jun-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0205036

Project: Thriftway Refinery Bloomfield, NM

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1_020524		Batch ID: GC-1_020524	Test Code: SW8021B	Units: µg/L	Analysis Date: 05/24/2002		Prep Date: 05/24/2002	
Client ID: 0205036		Run ID: GC-1_020524A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	19.16		0.5	20	0	95.8%	85	115
Ethylbenzene	19.29		0.5	20	0	96.5%	85	115
m,p-Xylene	38.49		1	40	0	96.2%	85	115
Methyl tert-Butyl Ether	19.69		1	20	0	98.5%	85	115
o-Xylene	18.86		0.5	20	0	94.3%	85	115
Toluene	18.64		0.5	20	0	93.2%	85	115
1,4-Difluorobenzene	104.9		0	110	0	95.4%	70	130
4-Bromochlorobenzene	119.4		0	110	0	108.5%	70	130
Fluorobenzene	107.4		0	110	0	97.7%	70	130

Sample ID: CCV2_020524		Batch ID: GC-1_020524	Test Code: SW8021B	Units: µg/L	Analysis Date: 05/24/2002		Prep Date: 05/24/2002	
Client ID: 0205036		Run ID: GC-1_020524A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	38.12		0.5	40	0	95.3%	85	115
Ethylbenzene	38.83		0.5	40	0	97.1%	85	115
m,p-Xylene	76.82		1	80	0	96.0%	85	115
Methyl tert-Butyl Ether	38.52		1	40	0	96.3%	85	115
o-Xylene	37.92		0.5	40	0	94.8%	85	115
Toluene	37.5		0.5	40	0	93.8%	85	115
1,4-Difluorobenzene	105.1		0	110	0	95.5%	70	130
4-Bromochlorobenzene	115		0	110	0	104.5%	70	130
Fluorobenzene	107.4		0	110	0	97.6%	70	130

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 0205036
Project: Thriftway Refinery Bloomfield, NM

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3_020524		Batch ID: GC-1_020524		Test Code: SW8021B		Units: µg/L		Analysis Date: 05/24/2002		Prep Date: 05/24/2002	
Client ID: 0205036		Run ID: GC-1_020524A		SeqNo: 50696							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.35	0.5	20	0	96.7%	85	115				
Ethylbenzene	19.58	0.5	20	0	97.9%	85	115				
m,p-Xylene	39.07	1	40	0	97.7%	85	115				
Methyl tert-Butyl Ether	18.93	1	20	0	94.6%	85	115				
o-Xylene	19.14	0.5	20	0	95.7%	85	115				
Toluene	18.92	0.5	20	0	94.6%	85	115				
1,4-Difluorobenzene	105.8	0	110	0	96.2%	70	130				
4-Bromochlorobenzene	111.7	0	110	0	101.6%	70	130				
Fluorobenzene	107.7	0	110	0	97.9%	70	130				

CLIENT: BioTech Remediation, Inc.
Work Order: 0205036
Project: Thriftway Refinery Bloomfield, NM
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0205020-20A	94.6	103	96.1					
0205020-24A	96.3	109	103					
0205020-24AMS	94.7	109	100					
0205020-24AMSD	94.6	108	100					
0205020-25A	95.6	107	99.5					
0205020-26A	95.8	108	98.7					
0205020-38A	96.6	104	99.1					
0205020-43A	95.4	102	97.6					
0205020-44A	96.8	107	99.1					
0205020-45A	97.4	109	99.2					
0205020-49A	96.8	107	98.7					
0205020-50A	95.1	103	96.9					
0205020-51A	96	107	99					
0205020-55A	96.8	109	99.6					
0205020-64A	94.5	103	96.3					
0205020-72A	95	105	97.3					
0205036-01A	95.2	101	96.5					
0205036-02A	95.9	108	98.8					
CCV1_020524	95.4	108	97.7					
CCV2_020524	95.5	104	97.6					
CCV3_020524	96.2	102	97.9					
LCS_020524	95.7	108	97.3					
MB_020524	95.8	110	97.4					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

OFF: (505) 325-5667
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LAB: (505) 325-1556
FAX: (505) 327-1496

July 10, 2002

Terry Griffin
BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
TEL: (505) 327-4965
FAX: (505) 564-3604

*For Terry
2/04/02*

RE: Thriftway Refinery - Bloomfield, NM

Order No.: 0206041

Dear Terry Griffin,

On Site Technologies, LTD. received 2 samples on 06/24/2002 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to be "DC" or "D Cox", written in a cursive style.

David Cox

P.O. BOX 2606 • FARMINGTON, NM 87499

EMAIL: ONSITE@ONSITELTD.COM

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

On Site Technologies, LTD.

Date: 10-Jul-02

CLIENT: BioTech Remediation, Inc.
Project: Thriftway Refinery - Bloomfield, NM
Lab Order: 0206041

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

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ANALYTICAL REPORT

Date: 10-Jul-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0206041	Client Sample ID:	Influent
Lab ID:	0206041-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery - Bloomfield, NM	Collection Date:	06/24/2002 12:40:00 PM
		COC Record:	11717

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DWC		
Methyl tert-Butyl Ether	200	10		µg/L	10	06/27/2002
Benzene	770	5		µg/L	10	06/27/2002
Toluene	200	5		µg/L	10	06/27/2002
Ethylbenzene	350	5		µg/L	10	06/27/2002
m,p-Xylene	770	10		µg/L	10	06/27/2002
o-Xylene	88	5		µg/L	10	06/27/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Sur: - Surrogate

1 of 2

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

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FAX: (505) 327-1496

ANALYTICAL REPORT

Date: 10-Jul-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0206041	Client Sample ID:	Effluent
Lab ID:	0206041-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery - Bloomfield, NM	Collection Date:	06/24/2002 12:45:00 PM
		COC Record:	11717

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DWC		
Methyl tert-Butyl Ether	24	1		µg/L	1	06/27/2002
Benzene	0.6	0.5		µg/L	1	06/27/2002
Toluene	0.5	0.5		µg/L	1	06/27/2002
Ethylbenzene	2.1	0.5		µg/L	1	06/27/2002
m,p-Xylene	3.5	1		µg/L	1	06/27/2002
o-Xylene	0.5	0.5		µg/L	1	06/27/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 10-Jul-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0206041

Project: Thriftway Refinery - Bloomfield, NM

QC SUMMARY REPORT

Method Blank

Sample ID: MB_020627	Batch ID: GC-1_020627	Test Code: SW8021B	Units: µg/L	Analysis Date: 06/27/2002	Prep Date: 06/27/2002
Client ID: 0206041	Run ID: GC-1_020627A	PQL	SPK value	SeqNo: 52887	
Analyte	Result	PQL	SPK Ref Val	LowLimit	HighLimit
Benzene	ND	0.5		%REC	RPD Ref Val
Ethylbenzene	ND	0.5		%RPD	RPDLimit
m,p-Xylene	ND	1			Qual
Methyl tert-Butyl Ether	ND	1			
o-Xylene	ND	0.5			
Toluene	1054	0.5			
1,4-Difluorobenzene	107.6	0			
4-Bromochlorobenzene	118.6	0			
Fluorobenzene	109.7	0			

J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 10-Jul-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0206041

Project: Thriftway Refinery - Bloomfield, NM

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0206041-01AMS		Batch ID: GC-1_020627	Test Code: SW8021B	Units: µg/L	Analysis Date: 06/27/2002		Prep Date: 06/27/2002	
Client ID: Influent	0206041	Run ID: GC-1_020627A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	1171		5	400	769.1	100.6%	70	130
Ethylbenzene	763.9		5	400	352.2	102.9%	70	130
m,p-Xylene	1554		10	800	774.5	97.4%	70	130
Methyl tert-Butyl Ether	601.3		10	400	205	99.1%	70	130
o-Xylene	474.6		5	400	88.25	96.6%	70	130
Toluene	597.6		5	400	204.9	98.2%	70	130
1,4-Difluorobenzene	1065		0	1100	0	96.8%	70	130
4-Bromochlorobenzene	1210		0	1100	0	110.0%	70	130
Fluorobenzene	1087		0	1100	0	98.8%	70	130

Sample ID: 0206041-01AMSD		Batch ID: GC-1_020627	Test Code: SW8021B	Units: µg/L	Analysis Date: 06/27/2002		Prep Date: 06/27/2002	
Client ID: Influent	0206041	Run ID: GC-1_020627A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	1127		5	400	769.1	89.6%	70	130
Ethylbenzene	735.7		5	400	352.2	95.9%	70	130
m,p-Xylene	1498		10	800	774.5	90.5%	70	130
Methyl tert-Butyl Ether	591.9		10	400	205	96.7%	70	130
o-Xylene	460.1		5	400	88.25	93.0%	70	130
Toluene	574.8		5	400	204.9	92.5%	70	130
1,4-Difluorobenzene	1054		0	1100	0	95.9%	70	130
4-Bromochlorobenzene	1208		0	1100	0	109.8%	70	130
Fluorobenzene	1084		0	1100	0	98.5%	70	130

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

On Site Technologies, LTD.

Date: 10-Jul-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0206041

Project: Thriftway Refinery - Bloomfield, NM

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS_020627	Batch ID: GC-1_020627	Test Code: SW8021B	Units: µg/L	Analysis Date: 06/27/2002			Prep Date: 06/27/2002						
Client ID:	0206041	Run ID:	GC-1_020627A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result												
Benzene	38.85			0.5	40	0	97.1%	80	120				
Ethylbenzene	39.46			0.5	40	0	98.7%	80	120				
m,p-Xylene	78.4			1	80	0	98.0%	80	120				
Methyl tert-Butyl Ether	39.58			1	40	0	99.0%	80	120				
o-Xylene	38.05			0.5	40	0	95.1%	80	120				
Toluene	37.88			0.5	40	0.1054	94.4%	80	120				
1,4-Difluorobenzene	106.6			0	110	0	97.0%	70	130				
4-Bromochlorobenzene	120.1			0	110	0	109.2%	70	130				
Fluorobenzene	108.9			0	110	0	99.0%	70	130				

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

On Site Technologies, LTD.

Date: 10-Jul-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0206041

Project: Thriftway Refinery - Bloomfield, NM

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1_020627		Batch ID: GC-1_020627		Test Code: SW8021B		Units: µg/L		Analysis Date: 06/27/2002			Prep Date: 06/27/2002	
Client ID:		0206041		Run ID:		GC-1_020627A		SeqNo: 52883				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		20.08	0.5	20	0	100.4%	85	115				
Ethylbenzene		20.33	0.5	20	0	101.6%	85	115				
m,p-Xylene		40.7	1	40	0	101.7%	85	115				
Methyl tert-Butyl Ether		19.9	1	20	0	99.5%	85	115				
o-Xylene		19.56	0.5	20	0	97.8%	85	115				
Toluene		19.51	0.5	20	0	97.5%	85	115				
1,4-Difluorobenzene		106.7	0	110	0	97.0%	70	130				
4-Bromochlorobenzene		117.7	0	110	0	107.0%	70	130				
Fluorobenzene		109.6	0	110	0	99.6%	70	130				

Sample ID: CCV2_020627		Batch ID: GC-1_020627		Test Code: SW8021B		Units: µg/L		Analysis Date: 06/27/2002		Prep Date: 06/27/2002	
Client ID:		0206041		Run ID:		GC-1_020627A		SeqNo: 52884			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.17	0.5	20	0	95.9%	85	115				
Ethylbenzene	19.37	0.5	20	0	96.9%	85	115				
m,p-Xylene	38.18	1	40	0	95.4%	85	115				
Methyl tert-Butyl Ether	18.95	1	20	0	94.7%	85	115				
o-Xylene	18.69	0.5	20	0	93.5%	85	115				
Toluene	18.54	0.5	20	0	92.7%	85	115				
1,4-Difluorobenzene	109.1	0	110	0	99.2%	70	130				
4-Bromochlorobenzene	123.6	0	110	0	112.4%	70	130				
Fluorobenzene	111.7	0	110	0	101.6%	70	130				

Qualifiers:

NID - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 0206041
Project: Thriftway Refinery - Bloomfield, NM

QC SUMMARY REPORT
 Continuing Calibration Verification Standard

Sample ID: CCV3_020627		Batch ID: GC-1_020627		Test Code: SW8021B		Units: µg/L		Analysis Date: 06/27/2002				Prep Date: 06/27/2002	
Client ID:		0206041		Run ID:		GC-1_020627A		SeqNo: 52885					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Benzene	38.74	0.5	40	0	96.8%	85	115						
Ethylbenzene	38.89	0.5	40	0	97.2%	85	115						
m,p-Xylene	76.38	1	80	0	95.5%	85	115						
Methyl tert-Butyl Ether	38.49	1	40	0	96.2%	85	115						
o-Xylene	37.42	0.5	40	0	93.5%	85	115						
Toluene	37.56	0.5	40	0	93.9%	85	115						
1,4-Difluorobenzene	107.9	0	110	0	98.1%	70	130						
4-Bromochlorobenzene	119.1	0	110	0	108.3%	70	130						
Fluorobenzene	111.5	0	110	0	101.4%	70	130						

CLIENT: BioTech Remediation, Inc.
Work Order: 0206041
Project: Thriftway Refinery - Bloomfield, NM
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ				
0206028-01A	88	100	105				
0206029-01A	99.2	109	102				
0206030-01A	90.1	103	102				
0206030-03A	96.5	111	100				
0206031-02A	98.4	110	102				
0206031-04A	92.1	107	95.5				
0206039-01A	91.8	112	95.2				
0206041-01A	96.6	110	99				
0206041-01AMS	96.8	110	98.8				
0206041-01AMSD	95.8	110	98.5				
0206041-02A	98.1	112	101				
0206048-01A	97.7	109	101				
0206049-01A	97.6	106	100				
0206049-02A	95.9	107	99.7				
0206050-02A	99.5	113	102				
0206052-01A	96.3	106	100				
CCV1_020627	97	107	99.6				
CCV2_020627	99.2	112	102				
CCV3_020627	98.1	108	101				
LCS_020627	97	109	99				
MB_020627	97.8	108	99.8				

Acronym

Surrogate

QC Limits

14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

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August 23, 2002

Terry Griffin
BioTech Remediation, Inc.
510 Airport Drive, Suite 104
Farmington, NM 87401
TEL: (505) 327-4965
FAX: (505) 564-3604

RE: Thriftway Refinery; Quarterly

Order No.: 0207046

Dear Terry Griffin,

iiná bá, Ltd. received 2 samples on 07/31/2002 for the analyses presented in the following report.

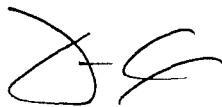
The Samples were analyzed for the following tests:

- Alkalinity, Total (M2320 B)
- Anions by Ion Chromatography (E300)
- Aromatic Volatiles by GC/PID (SW8021B)
- Conductivity @ 25C (E120.1)
- Hardness, Total (M2340 B)
- ICP Metals, Dissolved (SW6010B)
- ICP Metals, Total (SW6010B)
- Mercury, Total (SW7470)
- pH (E150.1)
- Polynuclear Aromatic Hydrocarbons (SW8270C)
- Total Dissolved Solids (CALC)
- Total Dissolved Solids (E160.1)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,



David Cox

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P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

iiná bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.
Project: Thriftway Refinery; Quarterly
Lab Order: 0207046

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

Analytical Comments for METHOD 6010B ICP METALS, TOTAL, Method Blank MB_020813: All samples and respective quality control samples are flagged B - Analyte detected in associated Method Blank. MB_020813 had a reportable result of 0.008 mg/L, which exceeded the method PQL, 0.006 mg/L.

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ANALYTICAL REPORT

Date: 23-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207046	Client Sample ID:	Stripper Influent
Lab ID:	0207046-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery; Quarterly	Collection Date:	07/31/2002 10:20:00 AM
		COC Record:	11645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID						
	SW8021B					Analyst: HNR
Methyl tert-Butyl Ether	190	10		µg/L	10	08/07/2002
Benzene	1100	5		µg/L	10	08/07/2002
Toluene	480	5		µg/L	10	08/07/2002
Ethylbenzene	420	5		µg/L	10	08/07/2002
m,p-Xylene	690	10		µg/L	10	08/07/2002
o-Xylene	93	5		µg/L	10	08/07/2002
ANIONS BY ION CHROMATOGRAPHY						
	E300					Analyst: DJC
Chloride	264	15.2		mg/L	253	08/08/2002
Sulfate	1200	20.2		mg/L	253	08/08/2002
Bromide	0.345	0.04		mg/L	1	08/08/2002
Fluoride	0.471	0.05		mg/L	1	08/08/2002
ICP METALS, DISSOLVED						
	SW6010B					Analyst: DJC
Calcium	332	1		mg/L	100	08/05/2002
Magnesium	52	0.7		mg/L	100	08/05/2002
Potassium	ND	6.2		mg/L	100	08/05/2002
Sodium	928	1.8		mg/L	100	08/05/2002
ALKALINITY, TOTAL						
	M2320 B					Analyst: HNR
Alkalinity, Bicarbonate (As CaCO ₃)	1080	5		mg/L CaCO ₃	1	08/01/2002
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	08/01/2002
Alkalinity, Hydroxide	ND	5		mg/L CaCO ₃	1	08/01/2002
Alkalinity, Total (As CaCO ₃)	1080	5		mg/L CaCO ₃	1	08/01/2002
CONDUCTIVITY @ 25C						
	E120.1					Analyst: HNR
Specific Conductance	4490	2		µS/cm	1	08/01/2002
HARDNESS, TOTAL						
	M2340 B					Analyst: HNR
Hardness (As CaCO ₃)	1040	1		mg/L	1	08/12/2002
PH						
	E150.1					Analyst: HNR
pH	7.05	2		pH units	1	08/01/2002
Temperature	22	0.		deg. C.	1	08/01/2002
TOTAL DISSOLVED SOLIDS						
	E160.1					Analyst: HNR
Total Dissolved Solids (Residue, Filterable)	3400	40		mg/L	1	08/05/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 2

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

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ANALYTICAL REPORT

Date: 23-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207046	Client Sample ID:	Stripper Influent
Lab ID:	0207046-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery; Quarterly	Collection Date:	07/31/2002 10:20:00 AM
		COC Record:	11645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
TOTAL DISSOLVED SOLIDS		CALC				Analyst: HNR
Total Dissolved Solids (Calculated)	3420		5	mg/L	1	08/12/2002
ICP METALS, TOTAL		SW6010B				Analyst: DJC
Arsenic	ND	0.04		mg/L	5	08/14/2002
Selenium	0.04	0.03	B	mg/L	5	08/14/2002
Lead	0.22	0.02		mg/L	5	08/14/2002
Cadmium	ND	0.005		mg/L	5	08/14/2002
Barium	0.08	0.01		mg/L	5	08/14/2002
Chromium	ND	0.14		mg/L	5	08/14/2002
Silver	ND	0.005		mg/L	5	08/14/2002
MERCURY, TOTAL		SW7470				Analyst: DJC
Mercury	ND	0.0005		mg/L	1	08/20/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

2 of 2

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

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ANALYTICAL REPORT

Date: 23-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207046	Client Sample ID:	Stripper Effluent
Lab ID:	0207046-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery; Quarterly	Collection Date:	07/31/2002 10:39:00 AM
		COC Record:	11645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID						
		SW8021B				Analyst: HNR
Methyl tert-Butyl Ether	7	1		µg/L	1	08/07/2002
Benzene	1.3	0.5		µg/L	1	08/07/2002
Toluene	1	0.5		µg/L	1	08/07/2002
Ethylbenzene	ND	0.5		µg/L	1	08/07/2002
m,p-Xylene	1	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002
ANIONS BY ION CHROMATOGRAPHY						
		E300				Analyst: DJC
Chloride	1160	15.4		mg/L	256	08/08/2002
Sulfate	1220	20.5		mg/L	256	08/08/2002
Bromide	0.241	0.04		mg/L	1	08/08/2002
Fluoride	0.579	0.05		mg/L	1	08/08/2002
ICP METALS, DISSOLVED						
		SW6010B				Analyst: DJC
Calcium	325	1		mg/L	100	08/05/2002
Magnesium	51.9	0.7		mg/L	100	08/05/2002
Potassium	ND	6.2		mg/L	100	08/05/2002
Sodium	936	1.8		mg/L	100	08/05/2002
ALKALINITY, TOTAL						
		M2320 B				Analyst: HNR
Alkalinity, Bicarbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	08/01/2002
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	08/01/2002
Alkalinity, Hydroxide	ND	5		mg/L CaCO ₃	1	08/01/2002
Alkalinity, Total (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	08/01/2002
CONDUCTIVITY @ 25C						
		E120.1				Analyst: HNR
Specific Conductance	5970	2		uS/cm	1	08/01/2002
HARDNESS, TOTAL						
		M2340 B				Analyst: HNR
Hardness (As CaCO ₃)	1020	1		mg/L	1	08/12/2002
PH						
		E150.1				Analyst: HNR
pH	3.47	2		pH units	1	08/01/2002
Temperature	23	0.		deg. C.	1	08/01/2002
TOTAL DISSOLVED SOLIDS						
		E160.1				Analyst: HNR
Total Dissolved Solids (Residue, Filterable)	3680	40		mg/L	1	08/05/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 2

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ANALYTICAL REPORT

Date: 23-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207046	Client Sample ID:	Stripper Effluent
Lab ID:	0207046-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery; Quarterly	Collection Date:	07/31/2002 10:39:00 AM
		COC Record:	11645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
TOTAL DISSOLVED SOLIDS		CALC				Analyst: HNR
Total Dissolved Solids (Calculated)	3690		5	mg/L	1	08/12/2002
ICP METALS, TOTAL		SW6010B				Analyst: DJC
Arsenic	ND	0.04		mg/L	5	08/14/2002
Selenium	0.035	0.03	B	mg/L	5	08/14/2002
Lead	ND	0.02		mg/L	5	08/14/2002
Cadmium	ND	0.005		mg/L	5	08/14/2002
Barium	0.075	0.01		mg/L	5	08/14/2002
Chromium	ND	0.14		mg/L	5	08/14/2002
Silver	ND	0.005		mg/L	5	08/14/2002
MERCURY, TOTAL		SW7470				Analyst: DJC
Mercury	ND	0.0005		mg/L	1	08/20/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

2 of 2

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

ina bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Method Blank

Sample ID: MB_020808	Batch ID: 300_W-08/12/	Test Code: E300	Units: mg/L	Analysis Date: 08/08/2002	Prep Date:
Client ID: 0207046	Run ID: IC-761_020808A	PQL	SPK value	SeqNo: 56229	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Bromide	ND	0.05		%REC	RPD Ref Val
Chloride	ND	0.05		%RPD	RPDLimit
Fluoride	ND	0.025			Qual
Sulfate	ND	0.05			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

ina bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 0207046-02BD		Batch ID: 300_W-08/12/		Test Code: E300		Units: mg/L		Analysis Date: 08/08/2002			Prep Date:	
Client ID: Stripper Effluent		0207046		Run ID: IC-761_020808A				SeqNo: 56244				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Bromide	ND	12.6	0	0	0.0%	0	0	0	0.0%	15		
Chloride	1114	12.6	0	0	0.0%	0	0	1164	4.4%	5		
Fluoride	1.512	6.3	0	0	0.0%	0	0	2.048	0.0%	15	J	
Sulfate	1148	12.6	0	0	0.0%	0	0	1225	6.5%	4	R	

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

1 of 1

ina bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.
Work Order: 0207046
Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0207039-01AMS	Batch ID: 300_W-08/12/	Test Code: E300	Units: mg/L	Analysis Date: 08/08/2002	Prep Date:
Client ID: 0207046	Run ID: IC-761_020808A	PQL	SPK value	SeqNo: 56243	
Analyte	Result	PQL	SPK Ref Val	LowLimit	HighLimit
Bromide	3.066	0.05	0	80	120
Chloride	2.856	0.05	0	80	121
Fluoride	1.463	0.025	0	80	120
Sulfate	5.667	0.05	2.835	87	110
			%REC	RPD Limit	RPD Limit
			100.3%		
			93.4%		
			95.7%		
			92.6%		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

ina bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.
Work Order: 0207046
Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS_020808	Batch ID: 300_W-08/12/	Test Code: E300	Units: mg/L	Analysis Date: 08/08/2002	Prep Date:
Client ID: 0207046	Run ID: IC-761_020808A	PQL	SPK value	SeqNo: 56231	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Bromide	2.61	0.05	2.514	0	103.8% 90 110
Chloride	2.432	0.05	2.514	0	96.8% 90 104
Fluoride	1.21	0.025	1.257	0	96.3% 90 110
Sulfate	2.42	0.05	2.514	0	96.3% 90 105

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

ina bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1_020808	Batch ID: 300_W-08/12/	Test Code: E300	Units: mg/L	Analysis Date: 08/08/2002	Prep Date:						
Client ID:	0207046	Run ID: IC-761_020808A		SeqNo: 56230							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	4.923	0.05	5.032	0	97.8%	90	110				
Chloride	4.795	0.05	5.032	0	95.3%	90	110				
Fluoride	2.502	0.025	2.516	0	99.4%	90	110				
Sulfate	5.081	0.05	5.032	0	101.0%	90	110				

Sample ID: CCV2_020808	Batch ID: 300_W-08/12/	Test Code: E300	Units: mg/L	Analysis Date: 08/08/2002	Prep Date:						
Client ID:	0207046	Run ID: IC-761_020808A		SeqNo: 56245							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	5.094	0.05	5.032	0	101.2%	90	110				
Chloride	4.841	0.05	5.032	0	96.2%	90	110				
Fluoride	2.529	0.025	2.516	0	100.5%	90	110				
Sulfate	5.393	0.05	5.032	0	107.2%	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

1 of 1

ina ba, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.
Work Order: 0207046
Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT
Method Blank

Sample ID: MB_020813	Batch ID: ICP_1_02081	Test Code: SW6010B	Units: mg/L	Analysis Date: 08/14/2002	Prep Date: 08/13/2002
Client ID:	0207046	Run ID: ICP_1_020814A		SeqNo: 56523	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Arsenic	.004	0.008			
Barium	ND	0.002			
Cadmium	ND	0.001			
Chromium	ND	0.028			
Lead	.002	0.004			
Selenium	.008	0.006			
Silver	ND	0.001			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

1 of 1

iiiná bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

QC SUMMARY REPORT

Work Order: 0207046

Sample Duplicate

Project: Thriftway Refinery; Quarterly

Sample ID: 0207046-01CD		Batch ID: ICP_1_02081		Test Code: SW6010B		Units: mg/L		Analysis Date: 08/14/2002			Prep Date: 08/13/2002		
Client ID: Stripper Influent		0207046		Run ID: ICP_1_020814A				SeqNo: 56526					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Limit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	.025	0.04	0	0	0.0%	0	0	0	0.025	0.0%	20	JB	
Barium	.08	0.01	0	0	0.0%	0	0	0	0.08	0.0%	20		
Cadmium	ND	0.005	0	0	0.0%	0	0	0	0	0.0%	20		
Chromium	ND	0.14	0	0	0.0%	0	0	0	0	0.0%	20		
Lead	.23	0.02	0	0	0.0%	0	0	0	0.22	4.4%	20		
Selenium	.035	0.03	0	0	0.0%	0	0	0	0.04	13.3%	20		
Silver	ND	0.005	0	0	0.0%	0	0	0	0	0.0%	20		

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

ina bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0207046-02CMS		Batch ID: ICP_1_02081		Test Code: SW6010B		Units: mg/L		Analysis Date: 08/14/2002			Prep Date: 08/13/2002		
Client ID: Stripper Effluent		0207046		Run ID: ICP_1_020814A				SeqNo: 56528					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic		.443	0.008	0.4232	0.002	104.2%	75	125					
Barium		4.38	0.002	4.232	0.015	103.1%	75	125					
Cadmium		.226	0.001	0.2116	0	106.8%	75	125					
Chromium		.417	0.028	0.4232	0	98.5%	75	125					
Lead		.469	0.004	0.4232	0	110.8%	75	125					
Selenium		.251	0.006	0.2116	0.007	115.3%	75	125				B	
Silver		.394	0.001	0.4232	0	93.1%	75	125					

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Date: 23-Aug-02

QC SUMMARY REPORT

QC SUMMARY REPORT

Laboratory Control Spike - generic

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

ina bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.
Work Order: 0207046
Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Continuing Calibration Blank

Sample ID: CCB1_020814		Batch ID: ICP_1_02081		Test Code: SW6010B		Units: mg/L		Analysis Date: 08/14/2002			Prep Date: 08/13/2002	
Client ID:		0207046		Run ID: ICP_1_020814A				SeqNo: 56520				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	ND	0.008	0	0	0.0%	0	0	0				
Barium	ND	0.002	0	0	0.0%	0	0	0				
Cadmium	ND	0.001	0	0	0.0%	0	0	0				
Chromium	ND	0.028	0	0	0.0%	0	0	0				
Lead	ND	0.004	0	0	0.0%	0	0	0				
Selenium	ND	0.006	0	0	0.0%	0	0	0				
Silver	ND	0.001	0	0	0.0%	0	0	0				

Sample ID: CCB2_020814	Batch ID: ICP_1_02081	Test Code: SW6010B	Units: mg/L	Analysis Date: 08/14/2002	Prep Date: 08/13/2002						
Client ID:	0207046	Run ID: ICP_1_020814A		SeqNo: 56529							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.008	0	0	0.0%	0	0	0			
Barium	ND	0.002	0	0	0.0%	0	0	0			
Cadmium	ND	0.001	0	0	0.0%	0	0	0			
Chromium	ND	0.028	0	0	0.0%	0	0	0			
Lead	ND	0.004	0	0	0.0%	0	0	0			
Selenium	ND	0.006	0	0	0.0%	0	0	0			
Silver	ND	0.001	0	0	0.0%	0	0	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

ina bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.
Work Order: 0207046
Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1_020814		Batch ID: ICP_1_02081		Test Code: SW6010B		Units: mg/L		Analysis Date: 08/14/2002		Prep Date: 08/13/2002	
Client ID:		0207046		Run ID: ICP_1_020814A				SeqNo: 56521			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.077	0.008	1.062	0	101.4%	90	110				
Barium	.107	0.002	0.1062	0	100.8%	90	110				
Cadmium	.215	0.001	0.2123	0	101.3%	90	110				
Chromium	.906	0.028	0.8944	0	101.3%	90	110				
Lead	1.185	0.004	1.185	0	100.0%	90	110				
Selenium	.55	0.006	0.5308	0	103.6%	90	110				B
Silver	.054	0.001	0.0531	0	101.7%	90	110				

Sample ID: CCV2_020814		Batch ID: ICP_1_02081		Test Code: SW6010B		Units: mg/L		Analysis Date: 08/14/2002		Prep Date: 08/13/2002	
Client ID:		0207046	Run ID:	ICP_1_020814A				SeqNo:	56530		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	1.111	0.008	1.062	0	104.6%	90	110				
Barium	.106	0.002	0.1062	0	99.8%	90	110				
Cadmium	.211	0.001	0.2123	0	99.4%	90	110				
Chromium	.91	0.028	0.8944	0	101.7%	90	110				
Lead	1.204	0.004	1.185	0	101.6%	90	110				
Selenium	.556	0.006	0.5308	0	104.7%	90	110				B
Silver	.053	0.001	0.0531	0	99.8%	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

ina bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Initial Calibration Verification Standard

Sample ID: ICV_020814		Batch ID: ICP_1_02081		Test Code: SW6010B		Units: mg/L		Analysis Date: 08/14/2002		Prep Date: 08/13/2002	
Client ID:		0207046		Run ID: ICP_1_020814A				SeqNo: 56522			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	.495	0.008	0.4958	0	99.8%	90	110				
Barium	.494	0.002	0.4958	0	99.6%	90	110				
Cadmium	.491	0.001	0.4958	0	99.0%	90	110				
Chromium	.497	0.028	0.4958	0	100.2%	90	110				
Lead	.489	0.004	0.4958	0	98.6%	90	110				
Selenium	.506	0.006	0.4958	0	102.1%	90	110				B
Silver	.125	0.001	0.124	0	100.8%	90	110				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

1 of 1

iiiná bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Method Blank

Sample ID: CCB1_020731	Batch ID: ICP_1_02080	Test Code: SW6010B	Units: mg/L	Analysis Date: 08/05/2002	Prep Date:
Client ID: 0207046	Run ID: ICP_1_020805A	PQL	SPK value	SeqNo: 55406	
Analyte	Result	%REC	LowLimit	HighLimit	RPD Ref Val
Calcium	ND				%RPD
Magnesium	ND				RPDLimit
Potassium	ND				Qual
Sodium	ND				

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

iiiná bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 0207043-01AD	Batch ID: ICP_1_02080	Test Code: SW6010B	Units: mg/L	Analysis Date: 08/05/2002	Prep Date:
Client ID: 0207046	Run ID: ICP_1_020805A	PQL	SPK value	SeqNo: 55410	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1956	1	0	0	0.0% 0 0 1919 1.9% 20
Magnesium	326.7	0.7	0	0	0.0% 0 0 320.4 1.9% 20
Potassium	385.3	6.2	0	0	0.0% 0 0 372.8 3.3% 20
Sodium	18640	1.8	0	0	0.0% 0 0 18120 2.8% 20

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

iina bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0207043-02AMS		Batch ID: ICP_1_02080		Test Code: SW6010B		Units: mg/L		Analysis Date: 08/05/2002		Prep Date:	
Client ID:		0207046		Run ID: ICP_1_020805A				SeqNo: 55412			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.424	0.01	0.9982	0.316	111.0%	75	125				
Magnesium	1.31	0.007	1.034	0.131	114.0%	75	125				
Potassium	1.471	0.062	1	0.291	118.0%	75	125				
Sodium	40.9	0.018	5.019	34.9	119.7%	75	125				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

ina ba, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS_020731	Batch ID: ICP_1_02080	Test Code: SW6010B	Units: mg/L	Analysis Date: 08/05/2002				Prep Date:			
Client ID:	0207046	Run ID: ICP_1_020805A		SeqNo: 55408							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	1.091	0.01	0.9982	0	109.3%	75	125				
Magnesium	1.164	0.007	1.034	0	112.6%	75	125				
Potassium	1.15	0.062	1	0	114.9%	75	125				
Sodium	5.84	0.018	5.019	0	116.4%	75	125				

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

iiiná bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1_020805		Batch ID: ICP_1_02080		Test Code: SW6010B		Units: mg/L		Analysis Date: 08/05/2002		Prep Date:		
Client ID:		0207046		Run ID: ICP_1_020805A				SeqNo: 55404				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		5.746	0.01	5.718	0	100.5%	90	110				
Magnesium		5.826	0.007	5.718	0	101.9%	90	110				
Potassium		5.85	0.062	5.718	0	102.3%	90	110				
Sodium		5.823	0.018	5.716	0	101.9%	90	110				

Sample ID: CCV2_020805	Batch ID: ICP_1_02080	Test Code: SW6010B	Units: mg/L	Analysis Date: 08/05/2002		Prep Date:					
Client ID:	0207046	Run ID: ICP_1_020805A		SeqNo: 55417							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	5.898	0.01	5.718	0	103.2%	90	110				
Magnesium	6.062	0.007	5.718	0	106.0%	90	110				
Potassium	6.12	0.062	5.718	0	107.0%	90	110				
Sodium	6.167	0.018	5.716	0	107.9%	90	110				

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

iiiná bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Initial Calibration Verification Standard

Sample ID: ICV_020805	Batch ID: ICP_1_02080	Test Code: SW6010B	Units: mg/L	Analysis Date: 08/05/2002	Prep Date:						
Client ID:	0207046	Run ID: ICP_1_020805A		SeqNo: 55405							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	2.208	0.01	2.055	0	107.4%	90	110				
Magnesium	4.442	0.007	4.11	0	108.1%	90	110				
Potassium	22.24	0.062	20.55	0	108.2%	90	110				
Sodium	6.682	0.018	6.164	0	108.4%	90	110				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

iiiná bá, Ltd.

Date: 26-Aug-02

CLIENT: BioTech Remediation, Inc.
Work Order: 0207046
Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Method Blank

Sample ID: MBlank	Batch ID: API_0207046	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date: 08/01/2002	Prep Date:
Client ID:	0207046	Run ID: WET CHEM_020801B		SeqNo: 55385	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	3.2	5			J
Alkalinity, Carbonate (As CaCO3)	ND	5			
Alkalinity, Hydroxide	ND	5			
Alkalinity, Total (As CaCO3)	3.2	5			J

Sample ID: MBlank	Batch ID: API_0207046	Test Code: E160.1	Units: mg/L	Analysis Date: 08/05/2002	Prep Date:
Client ID:	0207046	Run ID: WET CHEM_020805B		SeqNo: 56257	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	ND	40			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

iiiná bá, Ltd.

Date: 26-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 0207039-01AD	Batch ID: API_0207046	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date: 08/01/2002	Prep Date:
Client ID: 0207046	Run ID: WET CHEM_020801B	PQL	SPK value	SeqNo: 55392	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Alkalinity, Bicarbonate (As CaCO3)	257	5	0	0	0
Alkalinity, Carbonate (As CaCO3)	ND	5	0	0	0
Alkalinity, Hydroxide	ND	5	0	0	0
Alkalinity, Total (As CaCO3)	257	5	0	0	0
				%REC	RPD Ref Val
				0.0%	256
				0.0%	0
				0.0%	0
				0.0%	256
				%RPD	RPDLimit
				0.4%	6
				0.0%	20
				0.0%	20
				0.4%	6

Sample ID: 0207043-02AD	Batch ID: API_0207046	Test Code: E160.1	Units: mg/L	Analysis Date: 08/05/2002	Prep Date:
Client ID: 0207046	Run ID: WET CHEM_020805B	PQL	SPK value	SeqNo: 56263	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Total Dissolved Solids (Residue, Filtera	7551	40	0	0	0
				%REC	RPD Ref Val
				0.0%	7491
				0.8%	8

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

iiiná bá, Ltd.

Date: 26-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS 3049	Batch ID: API_0207046	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date: 08/01/2002	Prep Date:
Client ID:	0207046	Run ID: WET CHEM_020801B	SeqNo: 55386	LowLimit HighLimit	%RPD RPDLimit
Analyte	Result	PQL	SPK value	SPK Ref Val	Qual
Alkalinity, Total (As CaCO3)	183	5	185	3.2	97.2% 90 110
Sample ID: LCS 3049	Batch ID: API_0207046	Test Code: E120.1	Units: uS/cm	Analysis Date: 08/01/2002	Prep Date:
Client ID:	0207046	Run ID: WET CHEM_020801D	SeqNo: 55399	LowLimit HighLimit	%RPD RPDLimit
Analyte	Result	PQL	SPK value	SPK Ref Val	Qual
Specific Conductance	711	2	738	0	96.3% 90 110
Sample ID: LCS 3049	Batch ID: API_0207046	Test Code: E120.1	Units: uS/cm	Analysis Date: 08/01/2002	Prep Date:
Client ID:	0207046	Run ID: WET CHEM_020801D	SeqNo: 55402	LowLimit HighLimit	%RPD RPDLimit
Analyte	Result	PQL	SPK value	SPK Ref Val	Qual
Specific Conductance	713	2	738	0	96.6% 90 110
Sample ID: LCS 3054	Batch ID: API_0207046	Test Code: E150.1	Units: pH units	Analysis Date: 08/01/2002	Prep Date:
Client ID:	0207046	Run ID: WET CHEM_020801A	SeqNo: 55381	LowLimit HighLimit	%RPD RPDLimit
Analyte	Result	PQL	SPK value	SPK Ref Val	Qual
pH	7.247	2	7.3	0	99.3% 90 110
Sample ID: LCS 3054	Batch ID: API_0207046	Test Code: E150.1	Units: deg. C.	Analysis Date: 08/01/2002	Prep Date:
Client ID:	0207046	Run ID: WET CHEM_020801A	SeqNo: 55381	LowLimit HighLimit	%RPD RPDLimit
Analyte	Result	PQL	SPK value	SPK Ref Val	Qual
pH	7.247	2	7.3	0	99.3% 90 110

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 0207046
Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS 3054	Batch ID: API_0207046	Test Code: E150.1	Units: pH units	Analysis Date: 08/01/2002	Prep Date:
Client ID: 0207046	Run ID: WET CHEM_020801A	SeqNo: 55384			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
pH	7.232	2	7.3	0	99.1% 90 110

Sample ID: LCS 3054	Batch ID: API_0207046	Test Code: E150.1	Units: deg. C.	Analysis Date: 08/01/2002	Prep Date:
Client ID: 0207046	Run ID: WET CHEM_020801A	SeqNo: 55384			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
pH	7.232	2	7.3	0	99.1% 90 110

Sample ID: LCS 3056	Batch ID: API_0207046	Test Code: E160.1	Units: mg/L	Analysis Date: 08/05/2002	Prep Date:
Client ID: 0207046	Run ID: WET CHEM_020805B	SeqNo: 56258			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	2060	40	1985	0	103.8% 75 125

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

iiiná bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Method Blank

Sample ID: MB_020807	Batch ID: GC-1_020807	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/07/2002	Prep Date: 08/07/2002
Client ID:	0207046	Run ID: GC-1_020807A		SeqNo: 56311	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	ND	0.5			
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
Methyl tert-Butyl Ether	ND	1			
o-Xylene	ND	0.5			
Toluene	.0724	0.5			J

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	I of I

ina bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.
Work Order: 0207046
Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0207044-08AMS		Batch ID: GC-1_020807		Test Code: SW8021B		Units: µg/L		Analysis Date: 08/07/2002				Prep Date: 08/07/2002	
Client ID:		0207046		Run ID:		GC-1_020807A		SeqNo:		56296			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Benzene	372.6	5	400	0.75	93.0%	70	130						
Ethylbenzene	380.3	5	400	2.5	94.5%	70	130						
m,p-Xylene	755.2	10	800	2.8	94.1%	70	130						
Methyl tert-Butyl Ether	1366	10	400	970	99.1%	70	130						
o-Xylene	363.4	5	400	0	90.8%	70	130						
Toluene	370	5	400	1.1	92.2%	70	130						

Sample ID: 0207044-08AMSD		Batch ID: GC-1_020807	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/07/2002				Prep Date: 08/07/2002		
Client ID:		0207046	Run ID:	GC-1_020807A					SeqNo:	56297	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	364	5	400	0.75	90.8%	70	130	372.6	2.3%	15	
Ethylbenzene	371.6	5	400	2.5	92.3%	70	130	380.3	2.3%	15	
m,p-Xylene	738.2	10	800	2.8	91.9%	70	130	755.2	2.3%	15	
Methyl tert-Butyl Ether	1349	10	400	970	94.8%	70	130	1366	1.2%	15	
o-Xylene	357.2	5	400	0	89.3%	70	130	363.4	1.7%	15	
toluene	361.9	5	400	1.1	90.2%	70	130	370	2.2%	15	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

iinábá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS_020807	Batch ID: GC-1_020807	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/07/2002	Prep Date: 08/07/2002
Client ID:	0207046	Run ID: GC-1_020807A		SeqNo: 56310	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	34.62	0.5	40	0	86.6% 80 120
Ethylbenzene	34.8	0.5	40	0	87.0% 80 120
m,p-Xylene	69.41	1	80	0	86.8% 80 120
Methyl tert-Butyl Ether	37.32	1	40	0	93.3% 80 120
o-Xylene	33.6	0.5	40	0	84.0% 80 120
Toluene	33.83	0.5	40	0.07	84.4% 80 120

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

iiiná bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1_020807	Batch ID: GC-1_020807	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/07/2002		Prep Date: 08/07/2002					
Client ID:	0207046	Run ID:	GC-1_020807A	SeqNo:	56307						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	16.87	0.5	20	0	84.3%	85	115				S
Ethylbenzene	16.99	0.5	20	0	84.9%	85	115			✓	S
m,p-Xylene	34.21	1	40	0	85.5%	85	115				
Methyl tert-Butyl Ether	18.26	1	20	0	91.3%	85	115				
o-Xylene	16.31	0.5	20	0	81.5%	85	115				
Toluene	16.44	0.5	20	0	82.2%	85	115				
1,4-Difluorobenzene	109.9	0	110	0	100.0%	70	130				
4-Bromochlorobenzene	119.1	0	110	0	108.2%	70	130				
Fluorobenzene	113.9	0	110	0	103.5%	70	130				

O.K. SAMPLES
AIR
RE-ANALYZED
8/23/02

O.K. SAMPLES
ALL ANALYSES
RE-ANALYZED
08/07/02

Sample ID: CCV2_020807	Batch ID: GC-1_020807	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/07/2002		Prep Date: 08/07/2002					
Client ID:	0207046	Run ID: GC-1_020807A		SeqNo: 56308							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.51	0.5	20	0	92.6%	85	115				
Ethylbenzene	18.66	0.5	20	0	93.3%	85	115				
m,p-Xylene	37.54	1	40	0	93.8%	85	115				
Methyl tert-Butyl Ether	19.36	1	20	0	96.8%	85	115				
o-Xylene	17.99	0.5	20	0	90.0%	85	115				
Toluene	18.1	0.5	20	0	90.5%	85	115				
1,4-Difluorobenzene	109.8	0	110	0	99.8%	70	130				
4-Bromochlorobenzene	115.4	0	110	0	104.9%	70	130				
Fluorobenzene	112.8	0	110	0	102.6%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 020807	Batch ID: GC-1_020807	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/07/2002				Prep Date: 08/07/2002					
Client ID:	0207046	Run ID:	GC-1_020807A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result												
Benzene	38.4			0.5	40	0	96.0%	85	115				
Ethylbenzene	38.84			0.5	40	0	97.1%	85	115				
m,p-Xylene	77.04			1	80	0	96.3%	85	115				
Methyl tert-Butyl Ether	40.23			1	40	0	100.6%	85	115				
o-Xylene	37.37			0.5	40	0	93.4%	85	115				
Toluene	37.57			0.5	40	0	93.9%	85	115				
1,4-Difluorobenzene	109.5			0	110	0	99.5%	70	130				
4-Bromochlorobenzene	121.3			0	110	0	110.3%	70	130				
Fluorobenzene	112.7			0	110	0	102.5%	70	130				

Sample ID: CCV4_020807	Batch ID: GC-1_020807	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/07/2002		Prep Date: 08/07/2002						
Client ID:	0207046	Run ID: GC-1_020807A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result											
Benzene	17.35	0.5	20	0	86.7%	85	115					
Ethylbenzene	17.38	0.5	20	0	86.9%	85	115					
m,p-Xylene	34.85	1	40	0	87.1%	85	115					
Methyl tert-Butyl Ether	19.26	1	20	0	96.3%	85	115					
o-Xylene	17.08	0.5	20	0	85.4%	85	115					
Toluene	17.24	0.5	20	0	86.2%	85	115					
1,4-Difluorobenzene	110.5	0	110	0	100.5%	70	130					
4-Bromochlorobenzene	121.4	0	110	0	110.3%	70	130					
Fluorobenzene	113.4	0	110	0	103.1%	70	130					

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
 Work Order: 0207046
 Project: Thriftway Refinery; Quarterly
 Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0207044-01A	99.4	104	103					
0207044-02A	99.1	104	103					
0207044-03A	100	105	104					
0207044-04A	99.3	110	102					
0207044-05A	99.7	104	103					
0207044-06A	100	106	104					
0207044-07A	97.1	112	101					
0207044-08A	101	111	104					
0207044-08AMS	99	104	102					
0207044-08AMSD	98.4	105	102					
0207044-09A	100	112	103					
0207044-10A	100	110	104					
0207044-11A	101	111	104					
0207044-12A	101	114	105					
0207044-13A	101	112	104					
0207044-14A	101	105	104					
0207044-15A	100	107	104					
0207044-16A	101	107	104					
0207044-17A	98.9	109	102					
0207046-01A	96.9	110	99.2					
0207046-02A	100	108	104					
0207047-01A	100	114	104					
CCV1_020807	100	108	104					
CCV2_020807	99.8	105	102					
CCV3_020807	99.5	110	102					
CCV4_020807	100	110	103					
LCS_020807	99.7	109	103					

Acronym

Surrogate

QC Limits

14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

CLIENT: BioTech Remediation, Inc.
Work Order: 0207046
Project: Thriftway Refinery; Quarterly
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
MB_020807	100	109	103					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

iiiná bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Method Blank

Sample ID: MB_020820	Batch ID: AA_020820A	Test Code: SW7470	Units: mg/L	Analysis Date: 08/20/2002	Prep Date: 08/20/2002
Client ID: 0207046	Run ID: AA_020820A			SeqNo: 56972	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	.00024		0.0005		J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

iiiná bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 0207046-01CD	Batch ID: AA_020820A	Test Code: SW7470	Units: mg/L	Analysis Date: 08/20/2002	Prep Date: 08/20/2002						
Client ID: Stripper Influent	0207046	Run ID: AA_020820A		SeqNo: 56975							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0005	0	0	0.0002	0.0%	0	0	0.0002	0.0%	20

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

ina bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0207046-02CMS	Batch ID: AA_020820A	Test Code: SW7470	Units: mg/L	Analysis Date: 08/20/2002	Prep Date: 08/20/2002						
Client ID: Stripper Effluent	0207046	Run ID: AA_020820A		SeqNo: 56977							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	.0755	0.0005	0.0996	0.0001	75.7%	70	130				

Sample ID: 0207046-02CMSD	Batch ID: AA_020820A	Test Code: SW7470	Units: mg/L	Analysis Date: 08/20/2002	Prep Date: 08/20/2002						
Client ID: Stripper Effluent	0207046	Run ID: AA_020820A		SeqNo: 56978							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	.0648	0.0005	0.0996	0.0001	65.0%	70	130	0.0755	15.3%	20	S

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

1 of 1

iiiná bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS_020820	Batch ID: AA_020820A	Test Code: SW7470	Units: mg/L	Analysis Date: 08/20/2002				Prep Date: 08/20/2002			
Client ID:	0207046	Run ID: AA_020820A		SeqNo: 57086							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	.1074	0.0005	0.0995	0.0002	107.7%	70	130				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

iiná bá, Ltd.

Date: 23-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207046

Project: Thriftway Refinery; Quarterly

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1_020820	Batch ID: AA_020820A	Test Code: SW7470	Units: mg/L	Analysis Date: 08/20/2002	Prep Date: 08/20/2002
Client ID:	0207046	Run ID: AA_020820A		SeqNo: 56973	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	.0992	0.0005	0.0995	0	99.7% 80 120

Sample ID: CCV2_020820	Batch ID: AA_020820A	Test Code: SW7470	Units: mg/L	Analysis Date: 08/20/2002	Prep Date: 08/20/2002
Client ID:	0207046	Run ID: AA_020820A		SeqNo: 56980	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	.1011	0.0005	0.0995	0	101.6% 80 120

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

TestAmerica

INCORPORATED

8/14/02

ON SITE TECHNOLOGIES, LTD. 3130
DAVE COX
612 E. MURRAY DRIVE
FARMINGTON, NM 87401

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project

. The Laboratory Project number is 295200.

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report.

Page 1

Sample Identification	Lab Number	Collection Date
-----	-----	-----
0207046-01D	02-A125377	7/31/02
0207046-02D	02-A125378	7/31/02

These results relate only to the items tested.
This report shall not be reproduced except in full and with permission of the laboratory.

Report Approved By:



Report Date: 8/14/02

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director
Roxanne L. Connor, Technical Services

Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

ANALYTICAL REPORT

ON SITE TECHNOLOGIES, LTD. 3130
DAVE COX
612 E. MURRAY DRIVE
FARMINGTON, NM 87401

Lab Number: 02-A125377
Sample ID: 0207046-01D
Sample Type: Water
Site ID:

Project:
Project Name: Thriftway Refinery: Influent
Sampler:

Date Collected: 7/31/02
Time Collected: 10:20
Date Received: 8/1/02
Time Received: 9:00
Page: 1

02/02/02

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Naphthalene	0.175	mg/l	0.0250	5.0	8/13/02	14:51	M. Cobb	8270C	6101
Acenaphthene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Anthracene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Fluoranthene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Fluorene	0.0200	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Pyrene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Benzo(a)anthracene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Benzo(a)pyrene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Benzo(b)fluoranthene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Benzo(k)fluoranthene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Chrysene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Dibenzo(a,h)anthracene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Indeno(1,2,3-cd)pyrene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Acenaphthylene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Benzo(g,h,i)perylene	ND	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101
Phenanthrene	0.0280	mg/l	0.0050	1.0	8/11/02	22:40	M. Cobb	8270C	6101

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
-----	-----	-----	-----	-----	-----	-----

le report continued . . .

ANALYTICAL REPORT

Laboratory Number: 02-A125377
 Sample ID: 0207046-01D
 Project:
 Page 2

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
BNA's	1000 ml	1.0 ml	8/ 5/02		D. Harris	3510/625

Surrogate	% Recovery	Target Range
BNA Surr-Nitrobenzene-d5	130. #	40. - 127.
BNA Surr-2-Fluorobiphenyl	100.	42. - 113.
BNA Surr-Terphenyl-d14	79.	41. - 129.
BNA Surr-Phenol-d5	49.	1. - 75.
BNA Surr-2-Fluorophenol	79.	3. - 97.
BNA Surr-2,4,6-Tribromophenol	134.	35. - 174.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
 B - Analyte was detected in the method blank.
 J - Estimated Value below Report Limit.
 E - Estimated Value above the calibration limit of the instrument.
 # - Recovery outside Laboratory historical or method prescribed limits.

of Sample Report.

ANALYTICAL REPORT

ON SITE TECHNOLOGIES, LTD. 3130
DAVE COX
612 E. MURRAY DRIVE
FARMINGTON, NM 87401

Lab Number: 02-A125378
Sample ID: 0207046-02D
Sample Type: Water
Site ID:

Project:
Project Name: Thriftway Refinery: Effluent
Sampler:

Date Collected: 7/31/02
Time Collected: 10:39
Date Received: 8/1/02
Time Received: 9:00
Page: 1

0.03/02

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Naphthalene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Acenaphthene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Anthracene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Fluoranthene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Fluorene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Pyrene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Benzo(a)anthracene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Benzo(a)pyrene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Benzo(b)fluoranthene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Benzo(k)fluoranthene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Chrysene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Dibenzo(a,h)anthracene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Indeno(1,2,3-cd)pyrene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Acenaphthylene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Benzo(g,h,i)perylene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101
Phenanthrene	ND	mg/l	0.0500	10.0	8/13/02	15:33	M. Cobb	8270C	6101

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method

le report continued . . .

ANALYTICAL REPORT

Laboratory Number: 02-A125378
 Sample ID: 0207046-02D
 Project:
 Page 2

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Time	Analyst	Method
BNA's	995. ml	1.0 ml	8/ 5/02		D. Harris	3510/625

Surrogate	% Recovery	Target Range
BNA Surr-Nitrobenzene-d5	120.	40. - 127.
BNA Surr-2-Fluorobiphenyl	110.	42. - 113.
BNA Surr-Terphenyl-d14	100.	41. - 129.
BNA Surr-Phenol-d5	40.	1. - 75.
BNA Surr-2-Fluorophenol	50.	3. - 97.
BNA Surr-2,4,6-Tribromophenol	140.	35. - 174.

LABORATORY COMMENTS:

ND - Not detected at the report limit.
 B - Analyte was detected in the method blank.
 J - Estimated Value below Report Limit.
 E - Estimated Value above the calibration limit of the instrument.
 # - Recovery outside Laboratory historical or method prescribed limits.

of Sample Report.

PROJECT QUALITY CONTROL DATA

Project Number:

Page: 1

Matrix Spike Recovery

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
UST ANALYSIS								
Naphthalene	mg/l	< 0.0010	0.0390	0.0500	78	32. - 101.	6101	blank
Acenaphthene	mg/l	< 0.0010	0.0410	0.0500	82	40. - 113.	6101	blank
Anthracene	mg/l	< 0.0010	0.0480	0.0500	96	48. - 1220	6101	blank
Fluoranthene	mg/l	< 0.0010	0.0490	0.0500	98	48. - 127.	6101	blank
Fluorene	mg/l	< 0.0010	0.0430	0.0500	86	45. - 120.	6101	blank
Pyrene	mg/l	< 0.0010	0.0460	0.0500	92	49. - 127.	6101	blank
Benzo(a)anthracene	mg/l	< 0.0010	0.0480	0.0500	96	49. - 126.	6101	blank
Benzo(a)pyrene	mg/l	< 0.0010	0.0490	0.0500	98	48. - 126.	6101	blank
Benzo(b)fluoranthene	mg/l	< 0.0010	0.0490	0.0500	98	45. - 127.	6101	blank
Benzo(k)fluoranthene	mg/l	< 0.0010	0.0490	0.0500	98	46. - 134.	6101	blank
Chrysene	mg/l	< 0.0010	0.0450	0.0500	90	48. - 126.	6101	blank
Dibenzo(a,h)anthracene	mg/l	< 0.0010	0.0570	0.0500	114	31. - 149.	6101	blank
Indeno(1,2,3-cd)pyrene	mg/l	< 0.0010	0.0550	0.0500	110	26. - 147.	6101	blank
Acenaphthylene	mg/l	< 0.0010	0.0430	0.0500	86	41. - 112.	6101	blank
Benzo(g,h,i)perylene	mg/l	< 0.0010	0.0540	0.0500	108	26. - 152.	6101	blank
Phenanthrene	mg/l	< 0.0010	0.0470	0.0500	94	47. - 122.	6101	blank
BNA Surr-Nitrobenzene-d5	% Rec				116	40. - 127.	6101	
BNA Surr-2-Fluorobiphenyl	% Rec				92	42. - 113.	6101	
BNA Surr-Terphenyl-d14	% Rec				98	41. - 129.	6101	
BNA Surr-Phenol-d5	% Rec				55	1. - 75.	6101	
BNA Surr-2-Fluorophenol	% Rec				77	3. - 97.	6101	
BNA Surr-2,4,6-Tribromopheno	% Rec				127	35. - 174.	6101	

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
UST PARAMETERS						
Naphthalene	mg/l	0.0390	0.0400	2.53	44.	6101
Acenaphthene	mg/l	0.0410	0.0430	4.76	42.	6101

ect QC continued . . .

PROJECT QUALITY CONTROL DATA

Project Number:

Page: 2

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
Anthracene	mg/l	0.0480	0.0480	0.00	35.	6101
Fluoranthene	mg/l	0.0490	0.0490	0.00	38.	6101
Fluorene	mg/l	0.0430	0.0450	4.55	38.	6101
Pyrene	mg/l	0.0460	0.0460	0.00	36.	6101
Benzo(a)anthracene	mg/l	0.0480	0.0480	0.00	37.	6101
Benzo(a)pyrene	mg/l	0.0490	0.0490	0.00	37.	6101
Benzo(b)fluoranthene	mg/l	0.0490	0.0490	0.00	38.	6101
Benzo(k)fluoranthene	mg/l	0.0490	0.0480	2.06	36.	6101
Chrysene	mg/l	0.0450	0.0460	2.20	38.	6101
Dibenzo(a,h)anthracene	mg/l	0.0570	0.0570	0.00	45.	6101
Indeno(1,2,3-cd)pyrene	mg/l	0.0550	0.0540	1.83	43.	6101
Acenaphthylene	mg/l	0.0430	0.0450	4.55	39.	6101
Benzo(g,h,i)perylene	mg/l	0.0540	0.0520	3.77	47.	6101
Phenanthrene	mg/l	0.0470	0.0480	2.11	38.	6101
BNA Surr-Nitrobenzene-d5	% Rec		120.			6101
BNA Surr-2-Fluorobiphenyl	% Rec		92.			6101
BNA Surr-Terphenyl-d14	% Rec		97.			6101
BNA Surr-Phenol-d5	% Rec		56.			6101
BNA Surr-2-Fluorophenol	% Rec		79.			6101
BNA Surr-2,4,6-Tribromophenol	% Rec		126.			6101

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
UST PARAMETERS						
Naphthalene	mg/l	0.0500	0.0370	74	32 - 101	6101
Acenaphthene	mg/l	0.0500	0.0400	80	41 - 113	6101
Anthracene	mg/l	0.0500	0.0460	92	50 - 120	6101
Fluoranthene	mg/l	0.0500	0.0470	94	50 - 126	6101
Fluorene	mg/l	0.0500	0.0430	86	46 - 120	6101
Pyrene	mg/l	0.0500	0.0450	90	51 - 126	6101

ect QC continued . . .

PROJECT QUALITY CONTROL DATA

Project Number:

Page: 3

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
Benzo(a)anthracene	mg/l	0.0500	0.0470	94	50 - 126	6101
Benzo(a)pyrene	mg/l	0.0500	0.0470	94	50 - 126	6101
Benzo(b)fluoranthene	mg/l	0.0500	0.0490	98	47 - 125	6101
Benzo(k)fluoranthene	mg/l	0.0500	0.0430	86	47 - 133	6101
Chrysene	mg/l	0.0500	0.0440	88	49 - 126	6101
Dibenzo(a,h)anthracene	mg/l	0.0500	0.0550	110	35 - 146	6101
Indeno(1,2,3-cd)pyrene	mg/l	0.0500	0.0530	106	31 - 145	6101
Acenaphthylene	mg/l	0.0500	0.0410	82	42 - 112	6101
Benzo(g,h,i)perylene	mg/l	0.0500	0.0520	104	30 - 150	6101
Phenanthrene	mg/l	0.0500	0.0460	92	48 - 121	6101
BNA Surr-Nitrobenzene-d5	% Rec			107	40 - 127	6101
BNA Surr-2-Fluorobiphenyl	% Rec			88	42 - 113	6101
BNA Surr-Terphenyl-d14	% Rec			94	41 - 129	6101
BNA Surr-Phenol-d5	% Rec			45	1 - 75	6101
BNA Surr-2-Fluorophenol	% Rec			65	3 - 97	6101
BNA Surr-2,4,6-Tribromophenol	% Rec			120	35 - 174	6101

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
Naphthalene	< 0.0010	mg/l	6101	8/11/02	18:02
Acenaphthene	< 0.0010	mg/l	6101	8/11/02	18:02
Anthracene	< 0.0010	mg/l	6101	8/11/02	18:02
Fluoranthene	< 0.0010	mg/l	6101	8/11/02	18:02
Fluorene	< 0.0010	mg/l	6101	8/11/02	18:02
Pyrene	< 0.0010	mg/l	6101	8/11/02	18:02
Benzo(a)anthracene	< 0.0010	mg/l	6101	8/11/02	18:02
Benzo(a)pyrene	< 0.0010	mg/l	6101	8/11/02	18:02
Benzo(b)fluoranthene	< 0.0010	mg/l	6101	8/11/02	18:02
Benzo(k)fluoranthene	< 0.0010	mg/l	6101	8/11/02	18:02

ect QC continued . . .

PROJECT QUALITY CONTROL DATA

Project Number:

Page: 4

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Analysis Date	Analysis Time
Chrysene	< 0.0010	mg/l	6101	8/11/02	18:02
Dibenzo(a,h)anthracene	< 0.0010	mg/l	6101	8/11/02	18:02
Indeno(1,2,3-cd)pyrene	< 0.0010	mg/l	6101	8/11/02	18:02
Acenaphthylene	< 0.0010	mg/l	6101	8/11/02	18:02
Benzo(g,h,i)perylene	< 0.0010	mg/l	6101	8/11/02	18:02
Phenanthrene	< 0.0010	mg/l	6101	8/11/02	18:02
BNA Surr-Nitrobenzene-d5	92.	% Rec	6101	8/11/02	18:02
BNA Surr-2-Fluorobiphenyl	73.	% Rec	6101	8/11/02	18:02
BNA Surr-Terphenyl-d14	81.	% Rec	6101	8/11/02	18:02
BNA Surr-Phenol-d5	44.	% Rec	6101	8/11/02	18:02
BNA Surr-2-Fluorophenol	67.	% Rec	6101	8/11/02	18:02
BNA Surr-2,4,6-Tribromophenol	105.	% Rec	6101	8/11/02	18:02

- Value outside Laboratory historical or method prescribed QC limits.

End of Report for Project 295200

TESTAMERICA, INC.-NASHVILLE

COOLER RECEIPT FORM

Client: On Site BC# 245200

Cooler Received On: 8/1/02 And Opened On: 8/1/02 By: Mark Beasley

M. Beasley
(Signature)

1. Temperature of Cooler when opened 7.5 **Degrees Celsius**
2. Were custody seals on outside of cooler?.....YES.....NO
a. If yes, how many, what kind and where: 1 Front
b. Were signature and date correct?.....YES.....NO
3. Were custody seals on containers and intact?.....YES.....NO
4. Were custody papers inside cooler?.....YES.....NO
5. Were custody papers properly filled out (ink, signed, etc)?.....YES.....NO
6. Did you sign the custody papers in the appropriate place?.....YES.....NO
7. What kind of packing material used? Bubblewrap Peanuts Vermiculite Other None
8. Was sufficient ice used (if appropriate)?.....YES.....NO
9. Did all bottles arrive in good condition(unbroken)?.....YES.....NO
10. Were all bottle labels complete (#, date, signed, pres, etc)?.....YES.....NO
11. Did all bottle labels and tags agree with custody papers?.....YES.....NO
12. Were correct bottles used for the analysis requested?.....YES.....NO
13. If present, was any observable VOA headspace present?.....YES.....NO
14. If present, were VOA vials checked for air bubbles and noted if found?.....YES.....NO
15. Was sufficient amount of sample sent in each bottle?.....YES.....NO
16. Were correct preservatives used?.....YES.....NO
17. Was residual chlorine present?.....YES.....NO
18. Corrective action taken, if necessary:

See attached for resolution

On Site Technologies, LTD.

295206

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

Subcontractor:

Test America, Inc.
2960 Foster Creighton Drive
Nashville, TN 37204-0666

TEL: (800) 765-0980
FAX: (615) 726-3404

Acct #: 3130

31-Jul-02

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests									
				SW8270C									
0207046-01D	Aqueous	07/31/2002 10:20:00 AM	1LAMGU	1	125317								
0207046-02D	Aqueous	07/31/2002 10:39:00 AM	1LAMGU	1	125318								

Comments:

Please analyze two (2) water samples for PAH by SW8270.

Date/Time		Date/Time	
Relinquished by: <u>Heidi R</u>	<u>7/31/02 1:00</u>	Received by: <u>AM. Ely</u>	<u>7.5 8/1/02 9:00</u>
Relinquished by: _____	_____	Received by: _____	_____

CHAIN OF CUSTODY RECORD

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 10-1-01

Page: 1 of 1[illegible]

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072

August 30, 2002

Terry Griffin
BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
TEL: (505) 327-4965
FAX: (505) 564-3604

iiná bá

P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

*Letter
2/10/03*

RE: Thriftway Refinery Air Stripper

Order No.: 0208018

Dear Terry Griffin,

iiná bá, Ltd. received 2 samples on 08/27/2002 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,



David Cox

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072

iiná bá

P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

iiná bá, Ltd.

Date: 30-Aug-02

CLIENT: BioTech Remediation, Inc.
Project: Thriftway Refinery Air Stripper
Lab Order: 0208018

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

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Farmington, NM 87499

Fax: (505) 327-1496

ANALYTICAL REPORT

Date: 30-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Air Stripper
Work Order:	0208018	Client Sample ID:	Influent
Lab ID:	0208018-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery Air Stripper	Collection Date:	08/27/2002 8:54:00 AM
		COC Record:	12205

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	170	10		µg/L	10	08/28/2002
Benzene	1500	5		µg/L	10	08/28/2002
Toluene	120	5		µg/L	10	08/28/2002
Ethylbenzene	370	5		µg/L	10	08/28/2002
m,p-Xylene	760	10		µg/L	10	08/28/2002
o-Xylene	40	5		µg/L	10	08/28/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

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ANALYTICAL REPORT

Date: 30-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Air Stripper
Work Order:	0208018	Client Sample ID:	Effluent
Lab ID:	0208018-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery Air Stripper	Collection Date:	08/27/2002 8:57:00 AM
		COC Record:	12205

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	16	1		µg/L	1	08/28/2002
Benzene	0.6	0.5		µg/L	1	08/28/2002
Toluene	0.8	0.5		µg/L	1	08/28/2002
Ethylbenzene	ND	0.5		µg/L	1	08/28/2002
m,p-Xylene	1.3	1		µg/L	1	08/28/2002
o-Xylene	ND	0.5		µg/L	1	08/28/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

iiná bá, Ltd.

Date: 30-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0208018

Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT

Method Blank

Sample ID: MB_020828	Batch ID: GC-1_020828	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/28/2002	Prep Date: 08/28/2002		
Client ID:	0208018	Run ID: GC-1_020828A		SeqNo: 57449			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual		
Benzene	.1393	0.5					J
Ethylbenzene	ND	0.5					
m,p-Xylene	.1102	1					J
Methyl tert-Butyl Ether	ND	1					
o-Xylene	ND	0.5					
Toluene	.2127	0.5					J

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

iiiná bá, Ltd.

Date: 30-Aug-02

CLIENT: BioTech Remediation, Inc.
Work Order: 0208018
Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT
 Sample Matrix Spike

Sample ID: 0208021-01AMS		Batch ID: GC-1_020828		Test Code: SW8021B		Units: µg/L		Analysis Date: 08/28/2002		Prep Date: 08/28/2002	
Client ID: 0208018		Run ID: GC-1_020828A		PQL		SPK value		SPK Ref Val		%REC	
Analyte		Result						LowLimit		HighLimit	
								RPD Ref Val		%RPD	
										RPDLimit	
										Qual	
Benzene		171.6		2.5		200		0.5		85.5%	
Ethylbenzene		195.5		2.5		200		15		90.2%	
m,p-Xylene		722.5		5		400		420		75.6%	
Methyl tert-Butyl Ether		177.3		5		200		0		88.7%	
o-Xylene		180.3		2.5		200		0		90.2%	
Toluene		192.7		2.5		200		0		96.4%	

Sample ID: 0208021-01AMSD		Batch ID: GC-1_020828	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/28/2002			Prep Date: 08/28/2002				
Client ID: 0208018		Run ID: GC-1_020828A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte		Result										
Benzene		174.5	2.5	200	0.5	87.0%	70	130	171.6	1.7%	15	
Ethylbenzene		195.1	2.5	200	15	90.1%	70	130	195.5	0.2%	15	
m,p-Xylene		717.6	5	400	420	74.4%	70	130	722.5	0.7%	15	
Methyl tert-Butyl Ether		176	5	200	0	88.0%	70	130	177.3	0.8%	15	
o-Xylene		175.3	2.5	200	0	87.6%	70	130	180.3	2.8%	15	
Toluene		196.9	2.5	200	0	98.5%	70	130	192.7	2.2%	15	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

iiiná bá, Ltd.

Date: 30-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0208018

Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS_020828	Batch ID: GC-1_020828	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/28/2002	Prep Date: 08/28/2002
Client ID: 0208018	Run ID: GC-1_020828A	PQL	SPK value	SeqNo: 57448	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	39.56	0.5	40	0.1393	98.6% 80 120
Ethylbenzene	38.77	0.5	40	0	96.9% 80 120
m,p-Xylene	77.39	1	80	0.1102	96.6% 80 120
Methyl tert-Butyl Ether	37.04	1	40	0	92.6% 80 120
o-Xylene	37.02	0.5	40	0	92.5% 80 120
Toluene	37.18	0.5	40	0.2127	92.4% 80 120

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

ina bá, Ltd.

Date: 30-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0208018

Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1_020828	Batch ID: GC-1_020828	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/28/2002				Prep Date: 08/28/2002			
Client ID:	Run ID:	GC-1_020828A					SeqNo: 57444				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.75	0.5	40	0	96.9%	85	115				
Ethylbenzene	38.46	0.5	40	0	96.1%	85	115				
m,p-Xylene	76.89	1	80	0	96.1%	85	115				
Methyl tert-Butyl Ether	38.29	1	40	0	95.7%	85	115				
o-Xylene	36.62	0.5	40	0	91.6%	85	115				
Toluene	36.86	0.5	40	0	92.1%	85	115				
1,4-Difluorobenzene	107.9	0	110	0	98.1%	70	130				
4-Bromochlorobenzene	126	0	110	0	114.6%	70	130				
Fluorobenzene	105.7	0	110	0	96.1%	70	130				

Sample ID: CCV2_020828	Batch ID: GC-1_020828	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/28/2002				Prep Date: 08/28/2002			
Client ID:	Run ID:	PQL	SPK value	SPK Ref Val	%REC	SeqNo: 57445		RPD Ref Val	%RPD	RPDLimit	Qual
						LowLimit	HighLimit				
Analyte	Result										
Benzene	37.06	0.5	40	0	92.6%	85	115				
Ethylbenzene	37.84	0.5	40	0	94.6%	85	115				
m,p-Xylene	76.89	1	80	0	96.1%	85	115				
Methyl tert-Butyl Ether	37.71	1	40	0	94.3%	85	115				
o-Xylene	36.64	0.5	40	0	91.6%	85	115				
Toluene	36.28	0.5	40	0	90.7%	85	115				
1,4-Difluorobenzene	106.3	0	110	0	96.6%	70	130				
4-Bromochlorobenzene	124.8	0	110	0	113.5%	70	130				
Fluorobenzene	103.8	0	110	0	94.3%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 0208018

Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3_020828		Batch ID: GC-1_020828		Test Code: SW8021B		Units: µg/L		Analysis Date: 08/28/2002		Prep Date: 08/28/2002	
Client ID:		0208018		Run ID: GC-1_020828A				SeqNo: 57446			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.35	0.5	40	0	93.4%	85	115				
Ethylbenzene	39.34	0.5	40	0	98.3%	85	115				
m,p-Xylene	78.68	1	80	0	98.3%	85	115				
Methyl tert-Butyl Ether	36.67	1	40	0	91.7%	85	115				
o-Xylene	37.64	0.5	40	0	94.1%	85	115				
Toluene	37.48	0.5	40	0	93.7%	85	115				
1,4-Difluorobenzene	104.8	0	110	0	95.3%	70	130				
4-Bromochlorobenzene	125.6	0	110	0	114.1%	70	130				
Fluorobenzene	102.5	0	110	0	93.2%	70	130				

Sample ID: CCV4_020828		Batch ID: GC-1_020828		Test Code: SW8021B		Units: µg/L		Analysis Date: 08/28/2002		Prep Date: 08/28/2002	
Client ID:		0208018		Run ID: GC-1_020828A				SeqNo: 57447			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	35.72	0.5	40	0	89.3%	85	115				
Ethylbenzene	37.14	0.5	40	0	92.8%	85	115				
m,p-Xylene	74.08	1	80	0	92.6%	85	115				
Methyl tert-Butyl Ether	37.36	1	40	0	93.4%	85	115				
o-Xylene	35.72	0.5	40	0	89.3%	85	115				
Toluene	35.44	0.5	40	0	88.6%	85	115				
1,4-Difluorobenzene	105.3	0	110	0	95.7%	70	130				
4-Bromochlorobenzene	130.9	0	110	0	119.0%	70	130				
Fluorobenzene	101.8	0	110	0	92.5%	70	130				

Qualifiers: NID - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 0208018
Project: Thriftway Refinery Air Stripper
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0208015-01A	96.2	113	93.4					
0208016-01A	96.7	119	95.9					
0208016-02A	96.4	112	94.3					
0208016-03A	96.8	115	95.4					
0208018-01A	93	113	91					
0208018-02A	96.4	117	98.2					
0208020-01A	96.5	115	95.2					
0208021-01A	95.4	116	94.4					
0208021-01AMS	89.2	112	87.6					
0208021-01AMSD	89.1	107	86.9					
0208022-01A	97	116	95.2					
CCV1_020828	98.1	114	96.1					
CCV2_020828	96.6	113	94.3					
CCV3_020828	95.3	114	93.2					
CCV4_020828	95.7	119	92.5					
LCS_020828	95.5	114	96.7					
IB_020828	97.4	114	96					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

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October 17, 2002

Terry Griffin
BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401

TEL: 505-327-4965

FAX 505-564-3604

RE: Thriftway Refinery, Bloomfield, NM

Dear Terry Griffin:

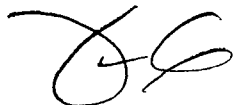
Order No.: 0210001

iina ba, Ltd. received 2 samples on 9/30/2002 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,



David Cox

*Letter
2/10/03*

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Fax: (505) 327-1496

Date: 17-Oct-02

CLIENT: BioTech Remediation, Inc.
Project: Thriftway Refinery, Bloomfield, NM
Lab Order: 0210001

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

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Fax: (505) 327-1496

Date: 17-Oct-02

CLIENT: BioTech Remediation, Inc.
Work Order: 0210001
Project: Thriftway Refinery, Bloomfield, NM
Lab ID: 0210001-001A

Client Sample Info: Thriftway Refinery
Tag Number: Influent
Collection Date: 9/30/2002 11:50:00 AM
Matrix: AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: JEM		
Benzene	1200	5.0		µg/L	10	10/10/2002
Ethylbenzene	990	5.0		µg/L	10	10/10/2002
m,p-Xylene	2200	10		µg/L	10	10/10/2002
Methyl tert-Butyl Ether	110	10		µg/L	10	10/10/2002
o-Xylene	630	5.0		µg/L	10	10/10/2002
Toluene	2200	10		µg/L	20	10/14/2002

Qualifiers: ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above quantitation range

Page 1 of 2

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

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P.O. Box 2606
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Fax: (505) 327-1496

Date: 17-Oct-02

CLIENT:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0210001	Tag Number:	Effluent
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	9/30/2002 11:54:00 AM
Lab ID:	0210001-002A	Matrix:	AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: JEM		
Benzene	ND	0.5		µg/L	1	10/10/2002
Ethylbenzene	0.6	0.5		µg/L	1	10/10/2002
m,p-Xylene	1.1	1.0		µg/L	1	10/10/2002
Methyl tert-Butyl Ether	7.5	1.0		µg/L	1	10/10/2002
o-Xylene	ND	0.5		µg/L	1	10/10/2002
Toluene	0.6	0.5		µg/L	1	10/10/2002

Qualifiers:	ND - Not Detected at the Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted precision limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Page 2 of 2

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

CLIENT: BioTech Remediation, Inc.

Work Order: 0210001

Project: Thriftway Refinery, Bloomfield, NM

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	MB_021010	SampType: MBLK	TestCode: BTEX_W	Units: µg/L	Prep Date: 10/10/2002	Run ID: GC-1_021010A
Client ID:	ZZZZZ	Batch ID: R3971	TestNo: SW8021B		Analysis Date: 10/10/2002	SeqNo: 58931
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene		0.077	0.50			J
Ethylbenzene		0.1548	0.50			J
m,p-Xylene		0.2281	1.0			J
Methyl tert-Butyl Ether		0.8336	1.0			J
o-Xylene		0.2236	0.50			J
Toluene		0.3028	0.50			J

Sample ID	MB_021014	SampType: MBLK	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_021014A
Client ID:	ZZZZZ	Batch ID: R3992	TestNo: SW8021B		Analysis Date: 10/14/2002	SeqNo: 59195
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene		0.0311	0.50			J
Ethylbenzene		0.044	0.50			J
m,p-Xylene		0.0825	1.0			J
Methyl tert-Butyl Ether		0.4645	1.0			J
o-Xylene		0.0479	0.50			J
Toluene		0.2212	0.50			J

Sample ID	LCS_021010	SampType: LCS	TestCode: BTEX_W	Units: µg/L	Prep Date: 10/10/2002	Run ID: GC-1_021010A
Client ID:	ZZZZZ	Batch ID: R3971	TestNo: SW8021B		Analysis Date: 10/10/2002	SeqNo: 58930
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene		42.3	0.50	40	0.077	106 86 106 0 0
Ethylbenzene		42.16	0.50	40	0.1548	105 88 110 0 0
m,p-Xylene		83.6	1.0	80	0.2281	104 86 110 0 0
Methyl tert-Butyl Ether		40.88	1.0	40	0.8336	100 85 112 0 0
o-Xylene		42.1	0.50	40	0.2236	105 83 110 0 0
Toluene		42.21	0.50	40	0.3028	105 84 105 0 0

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 0210001

Project: Thriftway Refinery, Bloomfield, NM

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	LCS_021014	SampleType:	LCS	TestCode:	BTEX_W	Units:	µg/L	Prep Date:		Run ID:	GC-1_021014A		
Client ID:	ZZZZZ	Batch ID:	R3992	TestNo:	SW8021B			Analysis Date:	10/14/2002	SeqNo:	59194		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	021006-003AMS	SampleType: MS	TestCode: BTEX_W	Units: µg/L	Prep Date: 10/10/2002	Run ID: GC-1_021010A						
Client ID: ZZZZZ		Batch ID: R3971	TestNo: SW8021B		Analysis Date: 10/10/2002	SeqNo: 58932						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	0210001-001AMS	SampleType:	MS	TestCode:	BTEX_W	Units:	µg/L	Prep Date:		Run ID:	GC-1_021014A		
Client ID:	Influent	Batch ID:	R3992	TestNo:	SW8021B			Analysis Date:	10/14/2002	SeqNo:	59196		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 0210001

Project: Thriftway Refinery, Bloomfield, NM

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	021006-003AMSD	SampType: MSD	TestCode: BTEX_W	Units: µg/L	Prep Date: 10/10/2002	Run ID: GC-1_021010A					
Client ID: ZZZZ		Batch ID: R3971	TestNo: SW8021B		Analysis Date: 10/10/2002	SeqNo: 58933					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	328	2.5	200	125	102	76	114	329.7	0.518	20	
Ethylbenzene	442.2	2.5	200	249.5	96.3	80	113	444.8	0.579	20	
m,p-Xylene	403.2	5.0	400	3.844	99.8	73	118	404.6	0.346	20	
Methyl tert-Butyl Ether	212.5	5.0	200	8.157	102	82	113	210	1.16	20	
o-Xylene	207.3	2.5	200	1.39	103	82	106	206.7	0.293	20	
Toluene	212.4	2.5	200	3.848	104	80	110	212.9	0.259	20	

Sample ID	0210001-001AMSD	SampType: MSD	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_021014A					
Client ID:	Influent	Batch ID: R3992	TestNo: SW8021B		Analysis Date: 10/14/2002	SeqNo: 59197					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1909	10	800	1192	89.7	76	114	2000	4.64	20	
Ethylbenzene	1775	10	800	982.1	99.2	80	113	1865	4.93	20	
m,p-Xylene	3789	20	1600	2127	104	73	118	3981	4.95	20	
Methyl tert-Butyl Ether	915.4	20	800	148.1	95.9	82	113	963.4	5.11	20	
o-Xylene	1432	10	800	618.1	102	82	106	1497	4.44	20	
Toluene	3018	10	800	2224	99.3	80	110	3163	4.68	20	

Sample ID	CCV1_021010	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date: 10/10/2002	Run ID: GC-1_021010A					
Client ID: ZZZZZ		Batch ID: R3971	TestNo: SW8021B		Analysis Date: 10/10/2002	SeqNo: 58926					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.38	0.50	20	0	107	85	115	0	0		
Ethylbenzene	21.78	0.50	20	0	109	85	115	0	0		
m,p-Xylene	43.49	1.0	40	0	109	85	115	0	0		
Methyl tert-Butyl Ether	19.46	1.0	20	0	97.3	85	115	0	0		
o-Xylene	21.74	0.50	20	0	109	85	115	0	0		
Toluene	21.85	0.50	20	0	109	85	115	0	0		

Qualifiers: NID - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 0210001

Project: Thriftway Refinery, Bloomfield, NM

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	CCV2_021010	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date: 10/10/2002	Run ID: GC-1_021010A					
Client ID: ZZZZZ		Batch ID: R3971	TestNo: SW8021B		Analysis Date: 10/10/2002	SeqNo: 58927					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	CCV3_021010	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date: 10/10/2002	Run ID: GC-1_021010A					
Client ID: ZZZZZ		Batch ID: R3971	TestNo: SW8021B		Analysis Date: 10/10/2002	SeqNo: 58928					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	CCV5_021010	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date: 10/10/2002	Run ID: GC-1_021010A					
Client ID: ZZZZZ		Batch ID: R3971	TestNo: SW8021B		Analysis Date: 10/10/2002	SeqNo: 58929					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 0210001

Project: Thriftway Refinery, Bloomfield, NM

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	CCV1_021014	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_021014A					
Client ID:	ZZZZZ	Batch ID: R3992	TestNo: SW8021B		Analysis Date: 10/14/2002	SeqNo: 59192					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	21.82	0.50	20	0	109	85	115	0	0		
Ethylbenzene	22.37	0.50	20	0	112	85	115	0	0		
m,p-Xylene	43.59	1.0	40	0	109	85	115	0	0		
Methyl tert-Butyl Ether	21.25	1.0	20	0	106	85	115	0	0		
o-Xylene	22.09	0.50	20	0	110	85	115	0	0		
Toluene	22.29	0.50	20	0	111	85	115	0	0		

Sample ID	CCV2_021014	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date:	Run ID: GC-1_021014A					
Client ID:	ZZZZZ	Batch ID: R3992	TestNo: SW8021B		Analysis Date: 10/14/2002	SeqNo: 59193					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	21.33	0.50	20	0	107	85	115	0	0		
Ethylbenzene	21.66	0.50	20	0	108	85	115	0	0		
m,p-Xylene	42.35	1.0	40	0	106	85	115	0	0		
Methyl tert-Butyl Ether	21.08	1.0	20	0	105	85	115	0	0		
o-Xylene	21.71	0.50	20	0	109	85	115	0	0		
Toluene	21.81	0.50	20	0	109	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
Page 5 of 5

CLIENT: BioTech Remediation, Inc.
Work Order: 0210001
Project: Thriftway Refinery, Bloomfield, N
Test No: SW8021B **Matrix:** W

QC SUMMARY REPORT SURROGATE RECOVERIES

Sample ID	14FBZ	4BCBZ	FLBZ					
0210001-001A	99.4	99.7	95.2					
0210001-001A	98.0	99.0	95.1					
0210001-001A	99.6	98.2	96.7					
0210001-001AMS	99.4	99.7	95.2					
0210001-001AMSD	98.0	99.0	95.1					
0210001-002A	104	96.9	103					
021006-003AMS	101	105	97.7					
021006-003AMSD	103	99.9	97.6					
CCV1_021010	102	97.0	100					
CCV1_021014	102	99.4	99.3					
CCV2_021010	103	96.8	99.0					
CCV2_021014	102	101	99.3					
CCV3_021010	103	98.1	100					
CCV5_021010	103	94.9 *	101					
LCS_021010	102	98.0	100					
LCS_021014	102	98.4	99.0					
MB_021010	103	94.6 *	101					
MB_021014	104	98.3	100					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	82-112
4BCBZ	= 4-Bromochlorobenzene	95-124
FLBZ	= Fluorobenzene	84-114

* Surrogate recovery outside acceptance limits

[illegible]

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **210121**
November 12, 2002

BIOTECH REMEDIATION
501 AIRPORT DRIVE SUITE 104
FARMINGTON, NM 87401

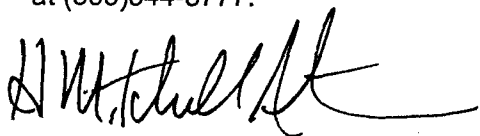
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J. B. [unclear]
2/10/03

Project Name THRIFTWAY REFINERY
Project Number 810

Attention: MIKE BEAUPARLANT

On 10/29/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.



H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
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Fax (505) 344-4413

CLIENT : BIOTECH REMEDIATION
PROJECT # : 810
PROJECT NAME : THRIFTWAY REFINERY

PINNACLE ID : 210121
DATE RECEIVED : 10/29/02
REPORT DATE : 11/12/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
210121 - 01	810-INFLUENT	AQUEOUS	10/29/02
210121 - 02	810-EFFLUENT	AQUEOUS	10/29/02

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED / 8015 GRO
CLIENT : BIOTECH REMEDIATION
PROJECT # : 810
PROJECT NAME : THRIFTWAY REFINERY

PINNACLE I.D.: 210121

SAMPLE		DATE		DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	810-INFLUENT	AQUEOUS	10/29/02	NA	11/11/02	10
02	810-EFFLUENT	AQUEOUS	10/29/02	NA	11/11/02	1
PARAMETER		DET. LIMIT	UNITS	810-INFLUENT	810-EFFLUENT	
FUEL HYDROCARBONS		50	UG/L	6000	< 50	
HYDROCARBON RANGE				C6-C14	C6-C14	
HYDROCARBONS QUANTITATED USING				GASOLINE	GASOLINE	
BENZENE	0.5	UG/L	310	< 0.5		
TOLUENE	0.5	UG/L	59	< 0.5		
ETHYLBENZENE	0.5	UG/L	220	< 0.5		
TOTAL XYLENES	1.0	UG/L	380	< 1.0		
METHYL-t-BUTYL ETHER	2.5	UG/L	82	< 2.5		
SURROGATE:						
BROMOFLUOROBENZENE (%)				116	105	
SURROGATE LIMITS						(80 - 120)

CHEMIST NOTES:
N/A

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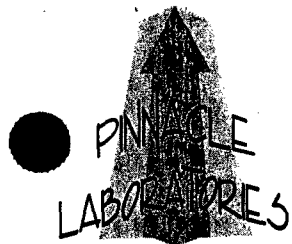
PINNACLE
LABORATORIES

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED / 8015 GRO	PINNACLE I.D.	: 210121
BLANK I.D.	: 111102	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 11/11/02
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: THRIFTWAY REFINERY		

PARAMETER	UNITS	
FUEL HYDROCARBONS	UG/L	<50
HYDROCARBON RANGE		C6-C14
HYDROCARBONS QUANTITATED USING		GASOLINE
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0
METHYL-t-BUTYL ETHER	UG/L	<2.5
SURROGATE:		
BROMOFLUOROBENZENE (%)		104
SURROGATE LIMITS (80 - 120)		

CHEMIST NOTES:
N/A



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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 210121
BATCH #	: 111102	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 11/11/02
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: THRIFTWAY REFINERY	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.8	99	19.6	98	1	(80 - 120)	20
TOLUENE	<0.5	20.0	20.2	101	19.8	99	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.1	106	20.8	104	1	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	62.9	105	61.7	103	2	(80 - 120)	20
METHYL-t-BUTYL ETHER	<2.5	20.0	19.6	98	19.6	98	0	(70 - 133)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



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GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 210121
MSMSD #	: 211059-01	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 11/11/02
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: THRIFTWAY REFINERY	UNITS	: UG/L

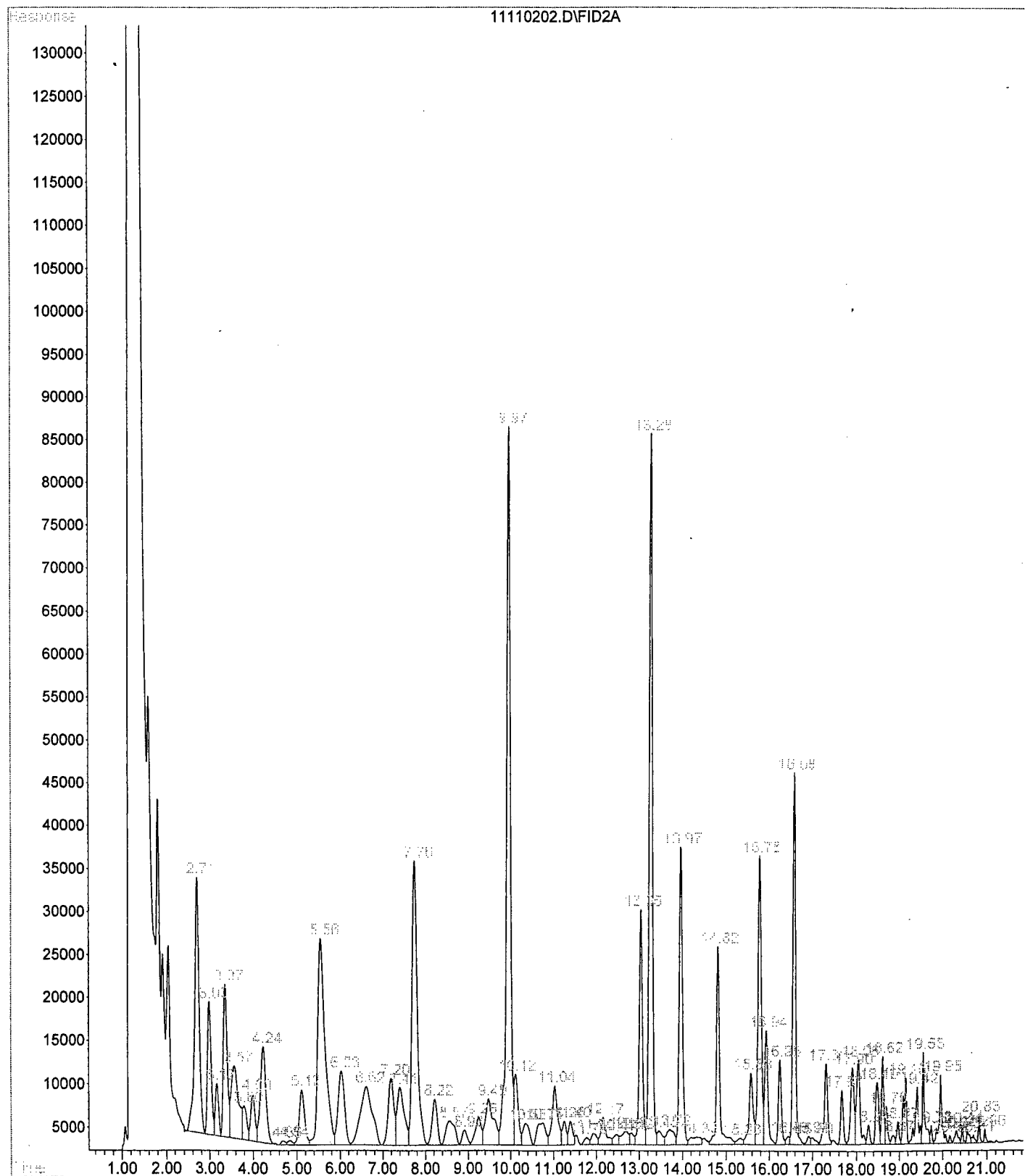
PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	20.4	102	20.8	104	2	(80 - 120)	20
TOLUENE	<0.5	20.0	20.8	104	21.4	107	3	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.6	108	22.0	110	2	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	64.3	107	65.8	110	2	(80 - 120)	20
METHYL-t-BUTYL ETHER	<2.5	20.0	20.2	101	20.7	104	2	(70 - 133)	20

CHEMIST NOTES:
N/A

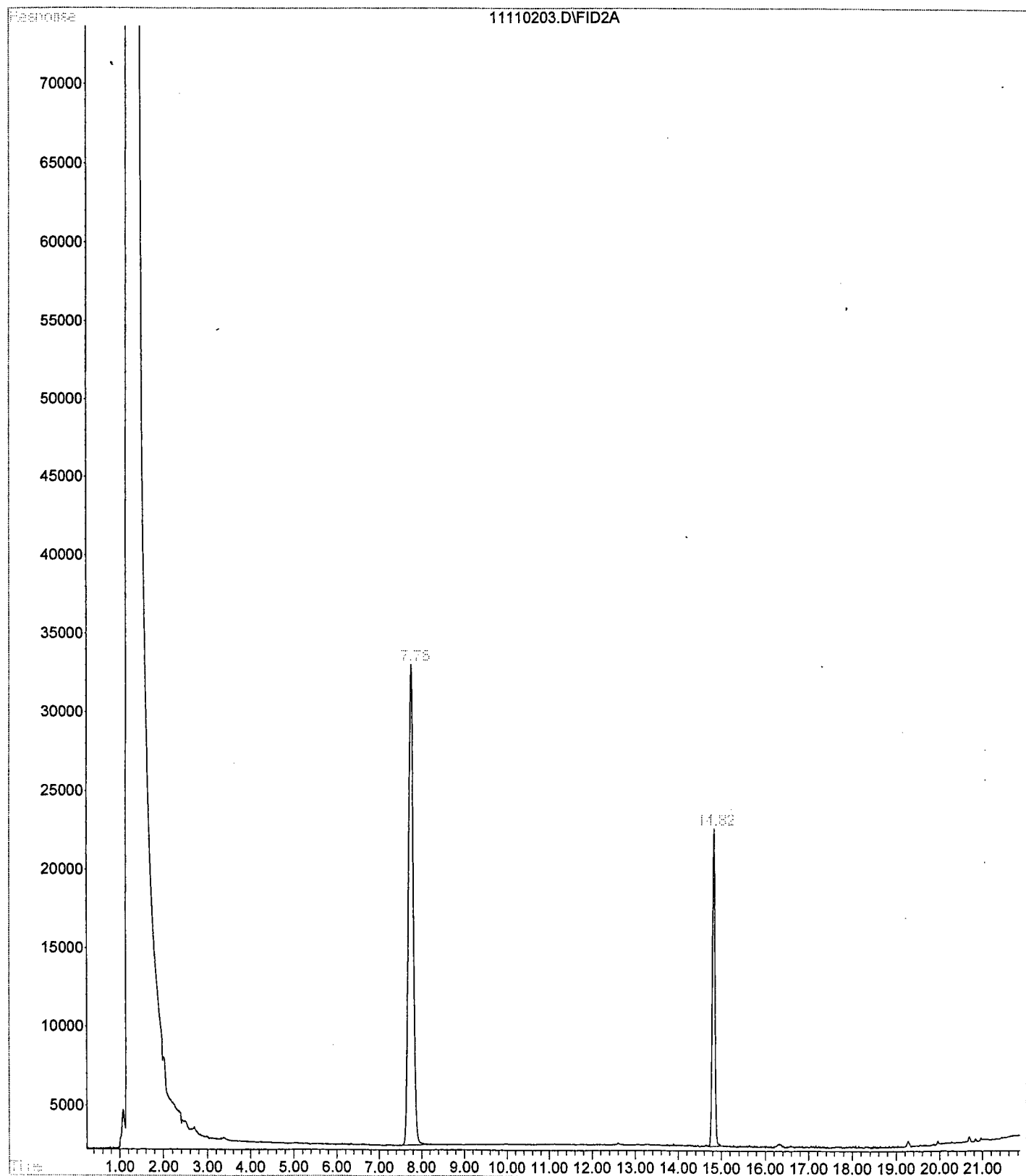
$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

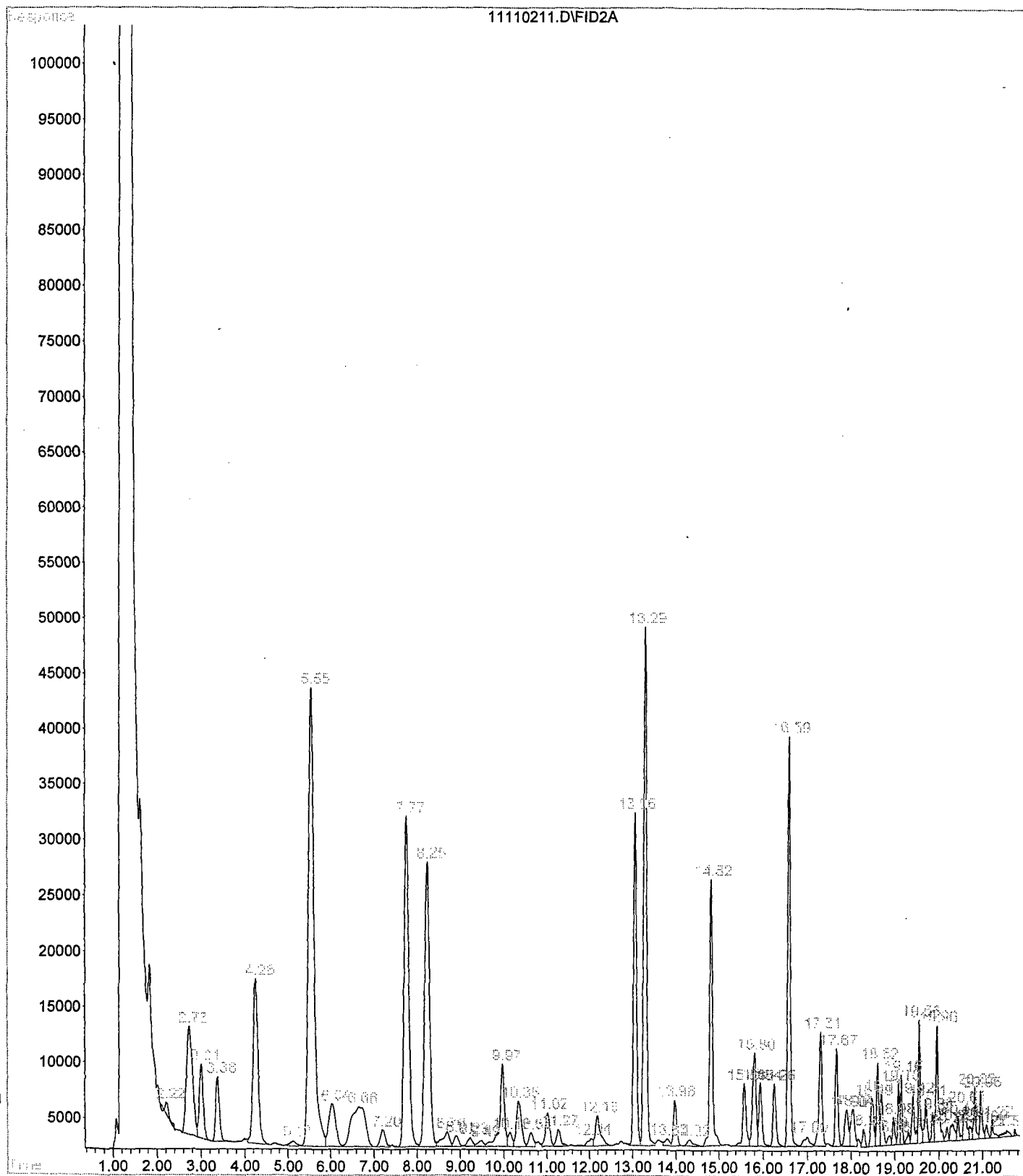
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Operator : BP
Acquired : 11 Nov 2002 9:18 using AcqMethod BTEX1031.M
Instrument : GC-2
Sample Name: GRO CCV
Misc Info : 10uL GC4-66-14
Vial Number: 2



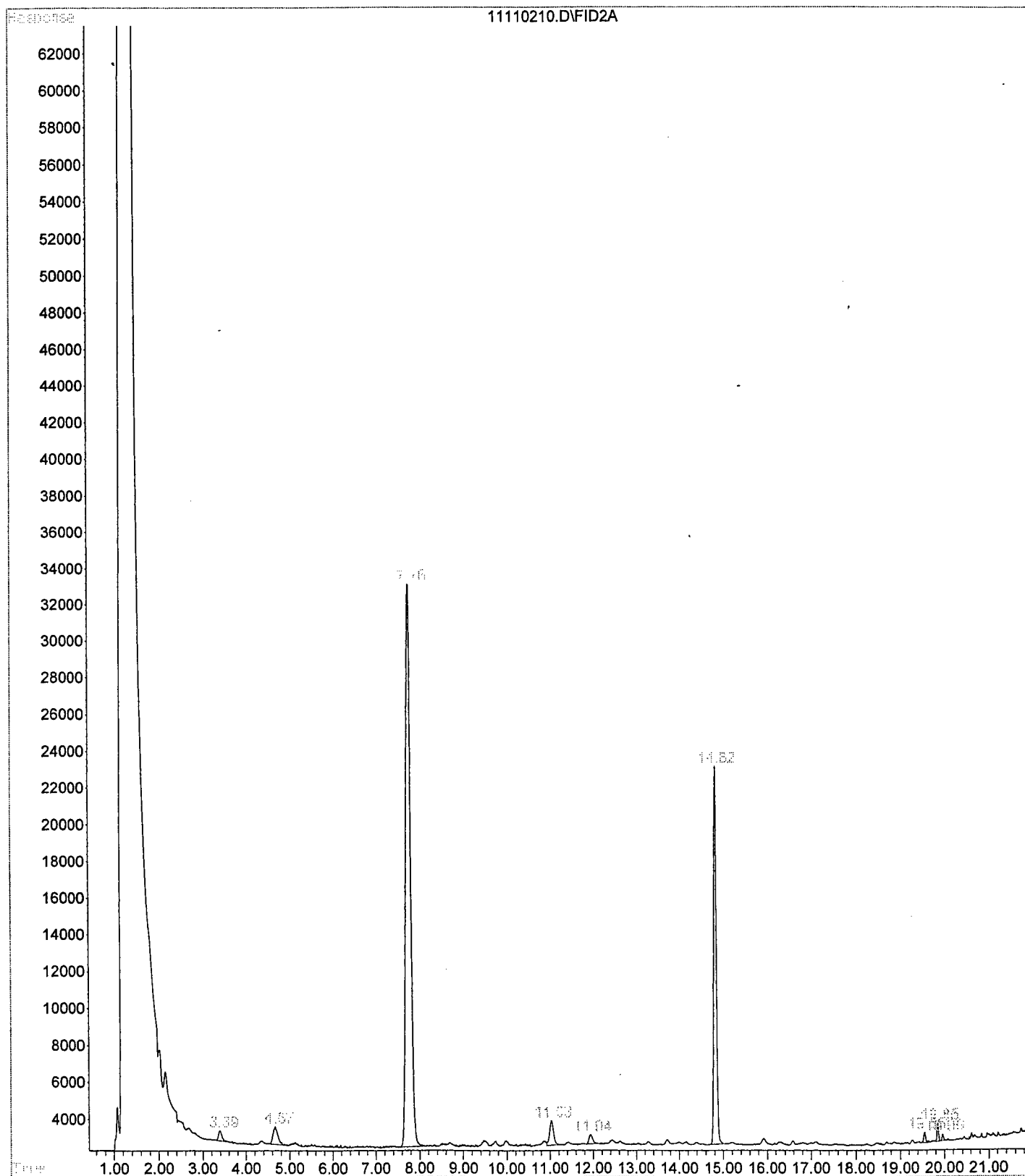
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Operator : BP
Acquired : 11 Nov 2002 9:49 using AcqMethod BTEX1031.M
Instrument : GC-2
Sample Name: Reagent Blank
Misc Info : 10uL GC4-66-12 / GC4-66-13
Vial Number: 3



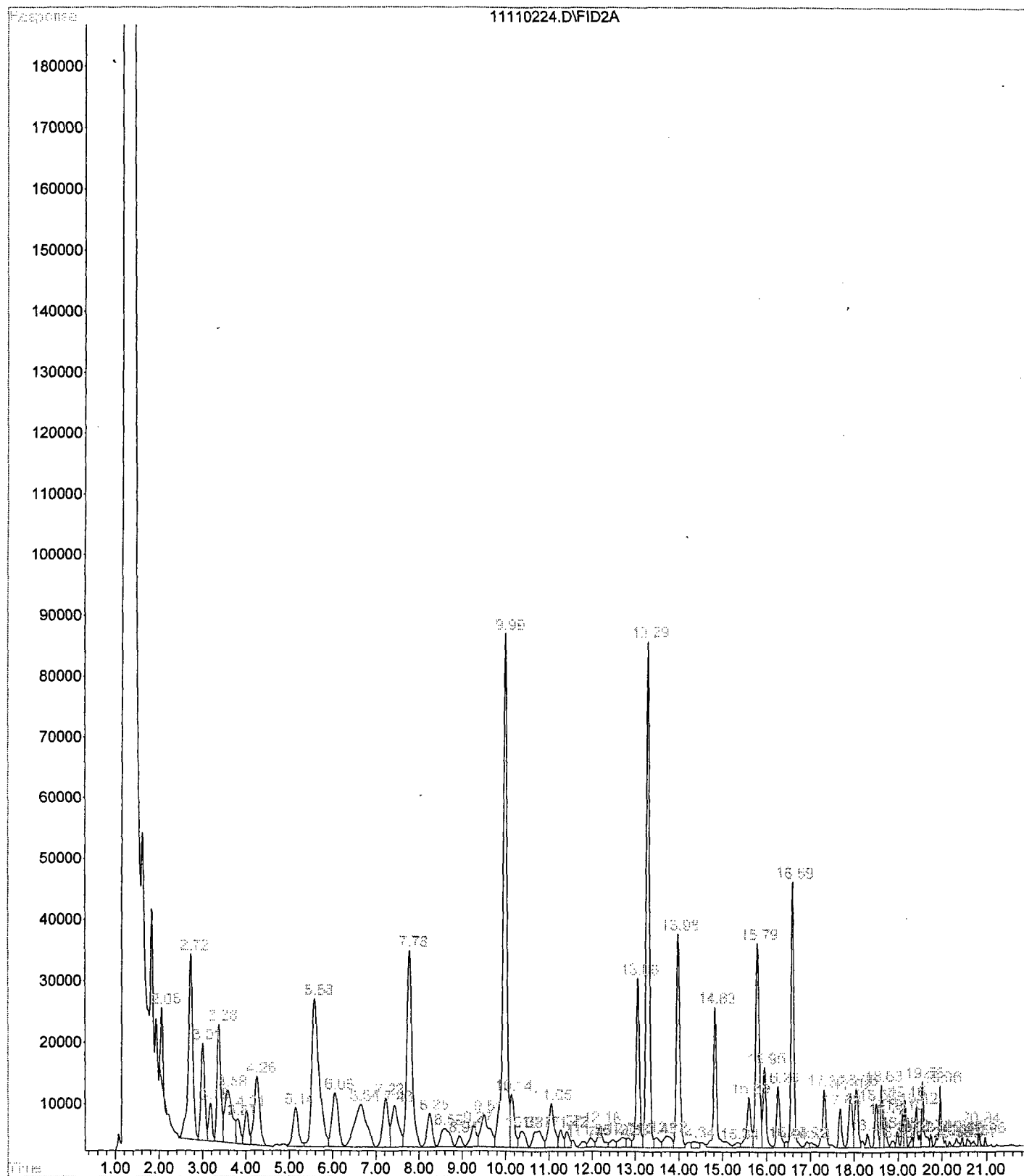
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Operator : BP
Acquired : 11 Nov 2002 13:59 using AcqMethod BTEX1031.M
Instrument : GC-2
Sample Name: 210121-01 10X
Misc Info : 500uL
Vial Number: 11



File : C:\HPCHEM\1\DATA\111102\11110210.D
Operator : BP
Acquired : 11 Nov 2002 13:28 using AcqMethod BTEX1031.M
Instrument : GC-2
Sample Name: 210121-02 1X
Misc Info : 5mL
Vial Number: 10



File : C:\HPCHEM\1\DATA\111102\11110224.D
Operator : BP
Acquired : 11 Nov 2002 20:43 using AcqMethod BTEX1031.M
Instrument : GC-2
Sample Name: GRO CCV
Misc Info : 10uL GC4-66-14
Vial Number: 8





*John Stated
2/10/13*

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
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Pinnacle Lab ID number **212107**
January 07, 2003

BIOTECH REMEDIATION
501 AIRPORT DRIVE SUITE 104
FARMINGTON, NM 87401

Project Name AIRSTRIPPER
Project Number 810

Attention: TERRY GRIFFIN

On 12/31/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure



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CLIENT	: BIOTECH REMEDIATION	PINNACLE ID	: 212107
PROJECT #	: 810	DATE RECEIVED	: 12/31/02
PROJECT NAME	: AIRSTRIPPER	REPORT DATE	: 01/07/03
PINNACLE			
ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
212107 - 01	AIRSTRIPPER-INFLUENT	AQUEOUS	12/30/02
212107 - 02	AIRSTRIPPER-EFFLUENT	AQUEOUS	12/30/02



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Albuquerque, New Mexico 87107
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED / 8015 GRO
CLIENT : BIOTECH REMEDIATION
PROJECT # : 810
PROJECT NAME : AIRSTRIPPER

PINNACLE I.D.: 212107

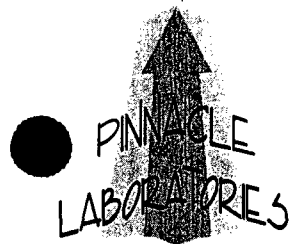
SAMPLE			DATE	DATE	DATE	DIL.
S. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
1	AIRSTRIPPER-INFLUENT	AQUEOUS	12/30/02	NA	01/02/03	10
2	AIRSTRIPPER-EFFLUENT	AQUEOUS	12/30/02	NA	01/02/03	1

PARAMETER	DET. LIMIT	UNITS	AIRSTRIPPER-INFLUENT	AIRSTRIPPER-EFFLUENT
UEL HYDROCARBONS	50	UG/L	5700	< 50
HYDROCARBON RANGE			C6-C14	C6-C14
HYDROCARBONS QUANTITATED USING			GASOLINE	GASOLINE
BENZENE	0.5	UG/L	290	< 0.5
TOLENE	0.5	UG/L	280	2.2
ETHYLBENZENE	0.5	UG/L	244	1.3
OTAL XYLENES	1.0	UG/L	430	4.9
DIETHYL-t-BUTYL ETHER	2.5	UG/L	120	< 2.5

URROGATE:
ROMOFLUOROBENZENE (%)
URROGATE LIMITS (80 - 120)

111 105

HEMIST NOTES:
/A



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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED / 8015 GRO	PINNACLE I.D.	: 212107
BLANK I.D.	: 010203	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 01/02/03
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: AIRSTRIPPER		

PARAMETER	UNITS	
FUEL HYDROCARBONS	UG/L	<50
HYDROCARBON RANGE		C6-C14
HYDROCARBONS QUANTITATED USING		GASOLINE
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0
METHYL-t-BUTYL ETHER	UG/L	<2.5
SURROGATE:		
BROMOFLUOROBENZENE (%)		99
SURROGATE LIMITS (80 - 120)		

CHEMIST NOTES:
N/A



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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 212107
BATCH I.D. #	: 010203	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 01/02/03
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: AIRSTRIPPER	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	18.6	93	19.1	96	3	(80 - 120)	20
TOLUENE	<0.5	20.0	19.8	99	20.2	101	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.0	105	21.5	108	2	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	62.8	105	64.5	108	3	(80 - 120)	20
METHYL-t-BUTYL ETHER	<2.5	20.0	18.6	93	19.0	95	2	(70 - 133)	20

CHEMIST NOTES:

N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



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GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 212107
MSMSD #	: 212107-02	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 01/02/03
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: AIRSTRIPPER	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.0	95	18.9	95	1	(80 - 120)	20
TOLUENE	2.2	20.0	22.2	100	24.5	112	10	(80 - 120)	20
ETHYLBENZENE	1.3	20.0	22.5	106	22.5	106	0	(80 - 120)	20
TOTAL XYLENES	4.9	60.0	68.1	105	68.1	105	0	(80 - 120)	20
METHYL-t-BUTYL ETHER	<2.5	20.0	20.4	102	20.5	103	0	(70 - 133)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

CHAIN OF CUSTODY

PLH Accession

212107

DATE: 12-30-02 PAGE: 1 OF 1

[illegible]

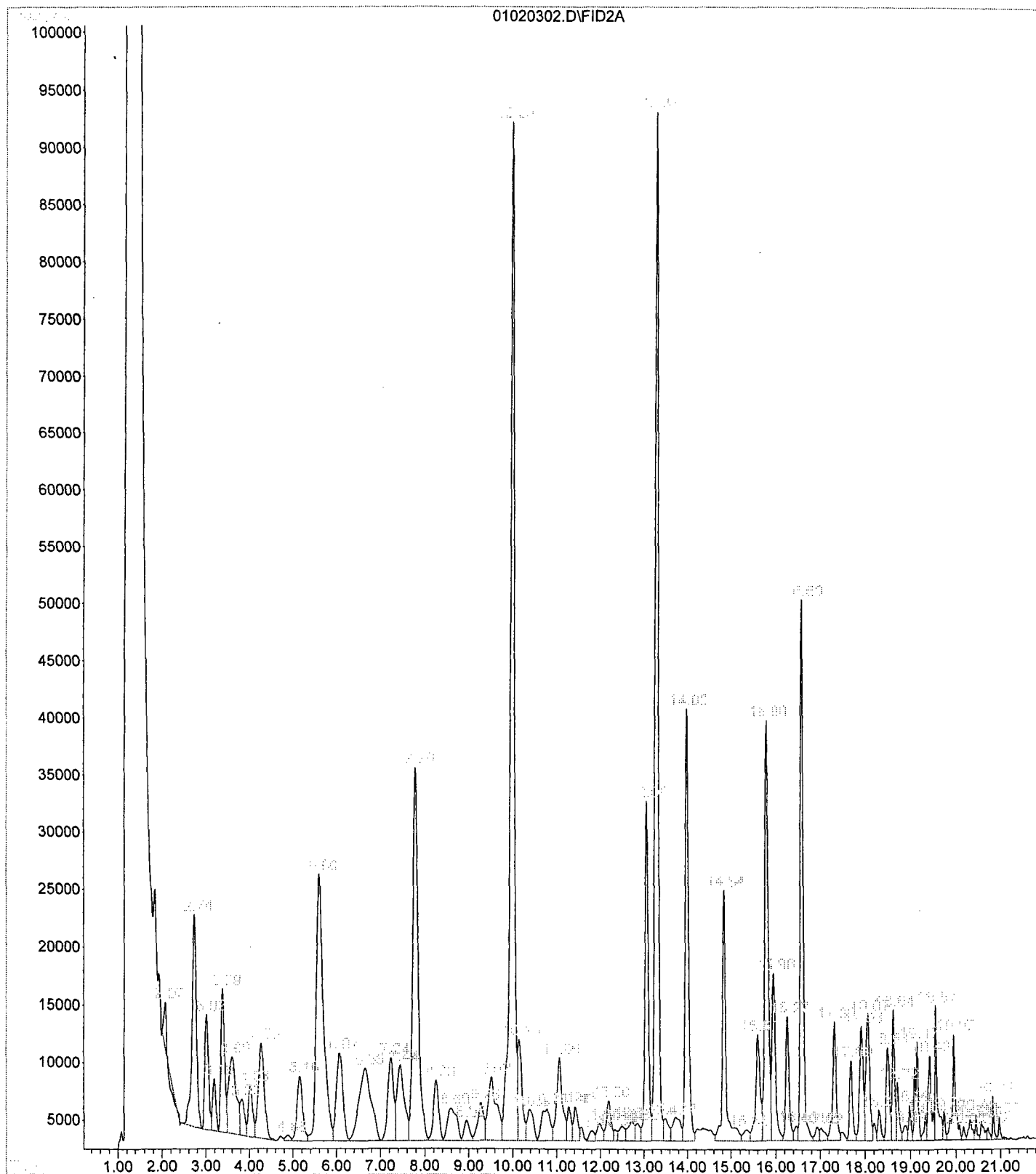
PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS						RELINQUISHED BY:		RELINQUISHED BY:	
PROJ. NO.: 810		(RUSH) ☐ 24hr	☐ 48hr	☐ 72hr	☐ 1 WEEK	(NORMAL) ☐		Signature: [Signature]	Time: 0904	Signature:	Time:
PROJ. NAME: AIE STEPPER		CERTIFICATION REQUIRED ☐ NM	☐ SDWA	☐ OTHER				Printed Name: MIKE SEPULVEDA	Date: 12-31-2	Printed Name:	Date:
P.O. NO.:		METHANOL PRESERVATION ☐						Company:		Company:	
SHIPPED VIA: BOS		COMMENTS: FIXED FEE ☐									
SAMPLE RECEIPT								RECEIVED BY: [Signature]		RECEIVED BY: [Signature]	
NO CONTAINERS	1							Signature: [Signature]	Time: 5:50	Signature:	Time:
CUSTOMER SEALS	N/A							Printed Name:	Date:	Printed Name:	Date:
RECEIVED INTACT	YES							Company:		Company:	
DATE OF USE	12/31/02							Pinquale Laboratories Inc.		Pinquale Laboratories Inc.	

SHADED AREAS ARE FOR LAB USE ONLY

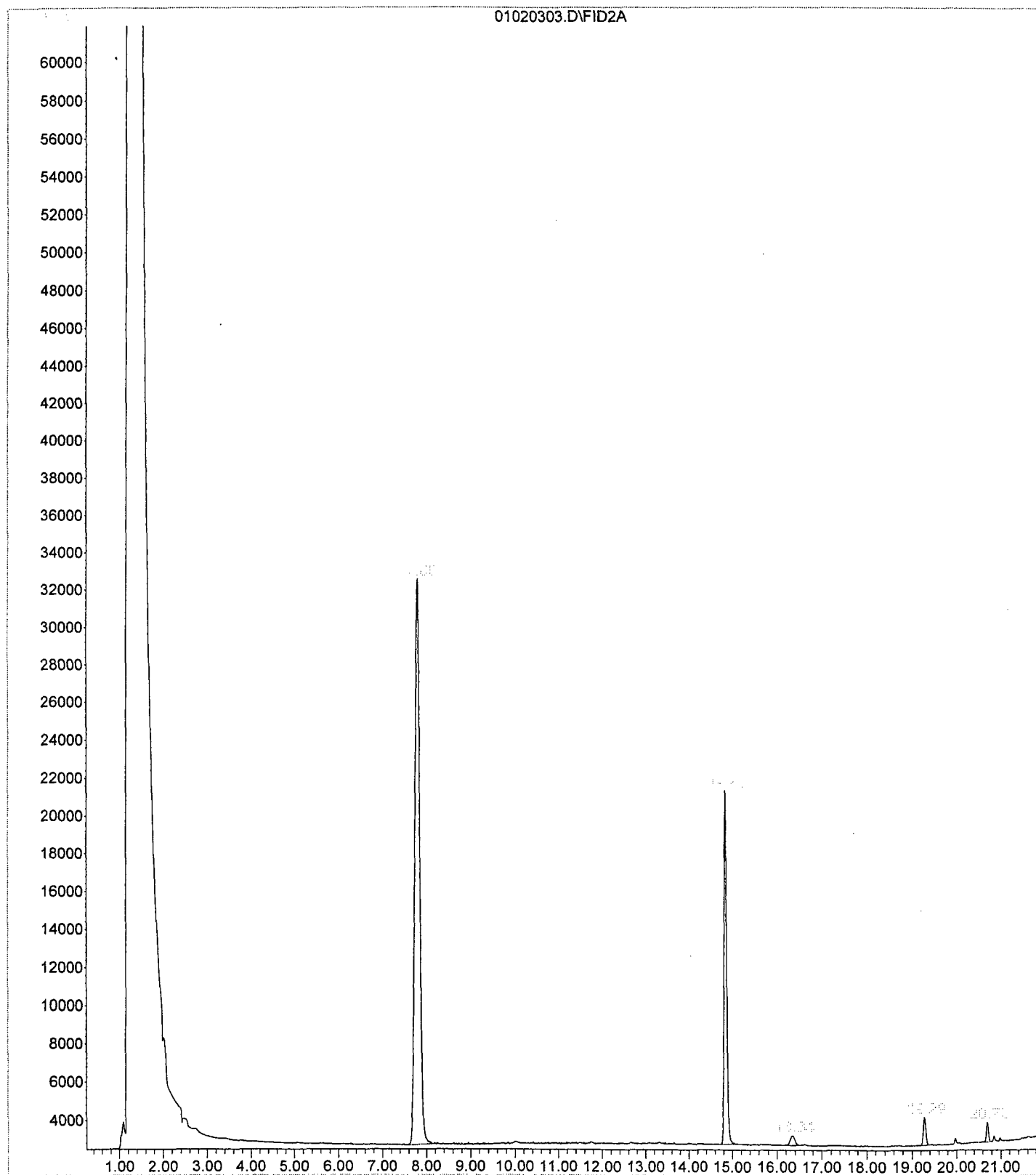
PLEASE FILL THIS FORM IN COMPLETELY.

File : C:\HPCHEM\1\DATA\010203\01020302.D
Operator : BP
Acquired : 2 Jan 2003 9:47 using AcqMethod BTEX1118.M
Instrument : GC-2
Sample Name: GRO CCV
Misc Info : 10uL GC4-73-02
Vial Number: 2

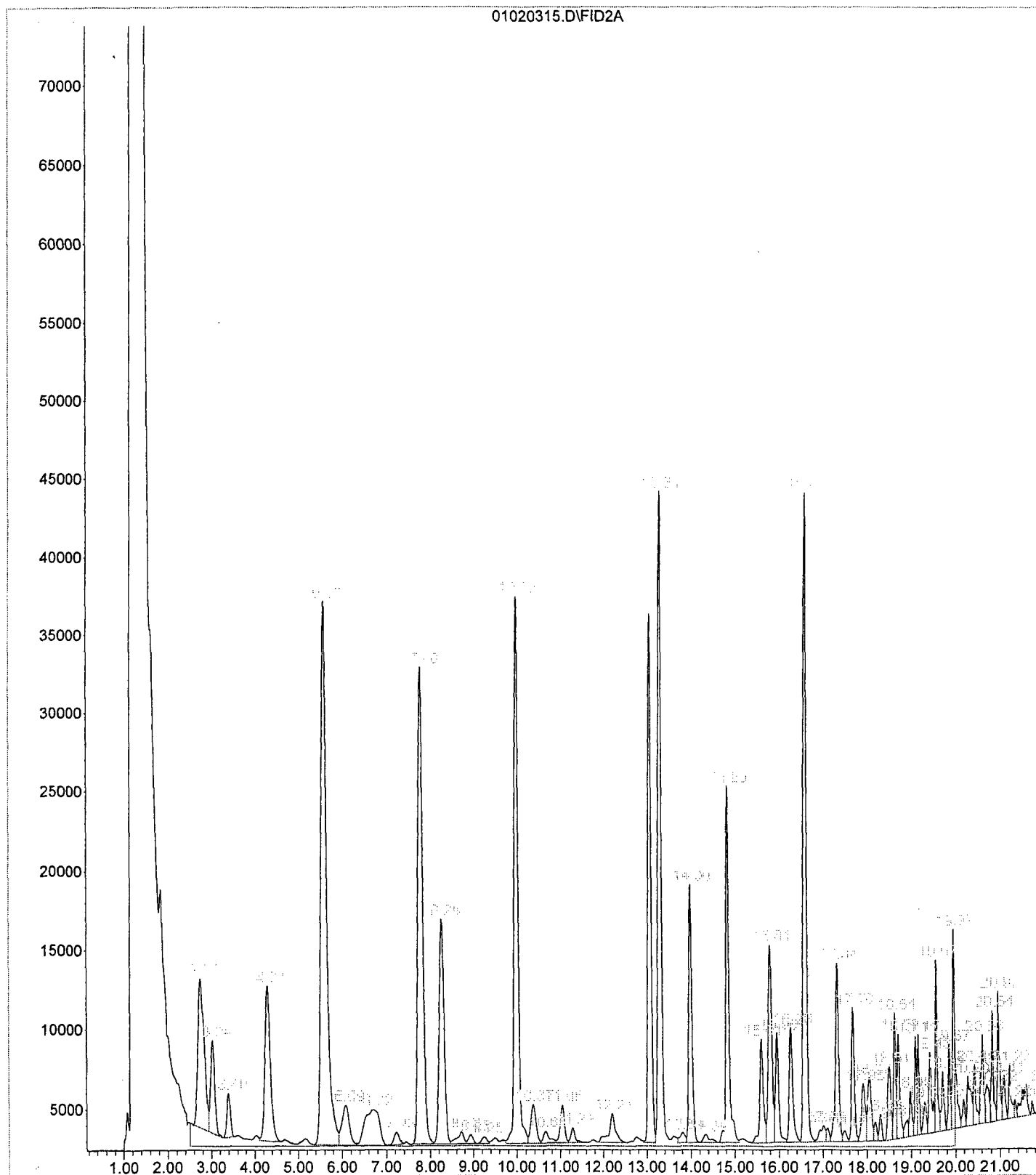
107



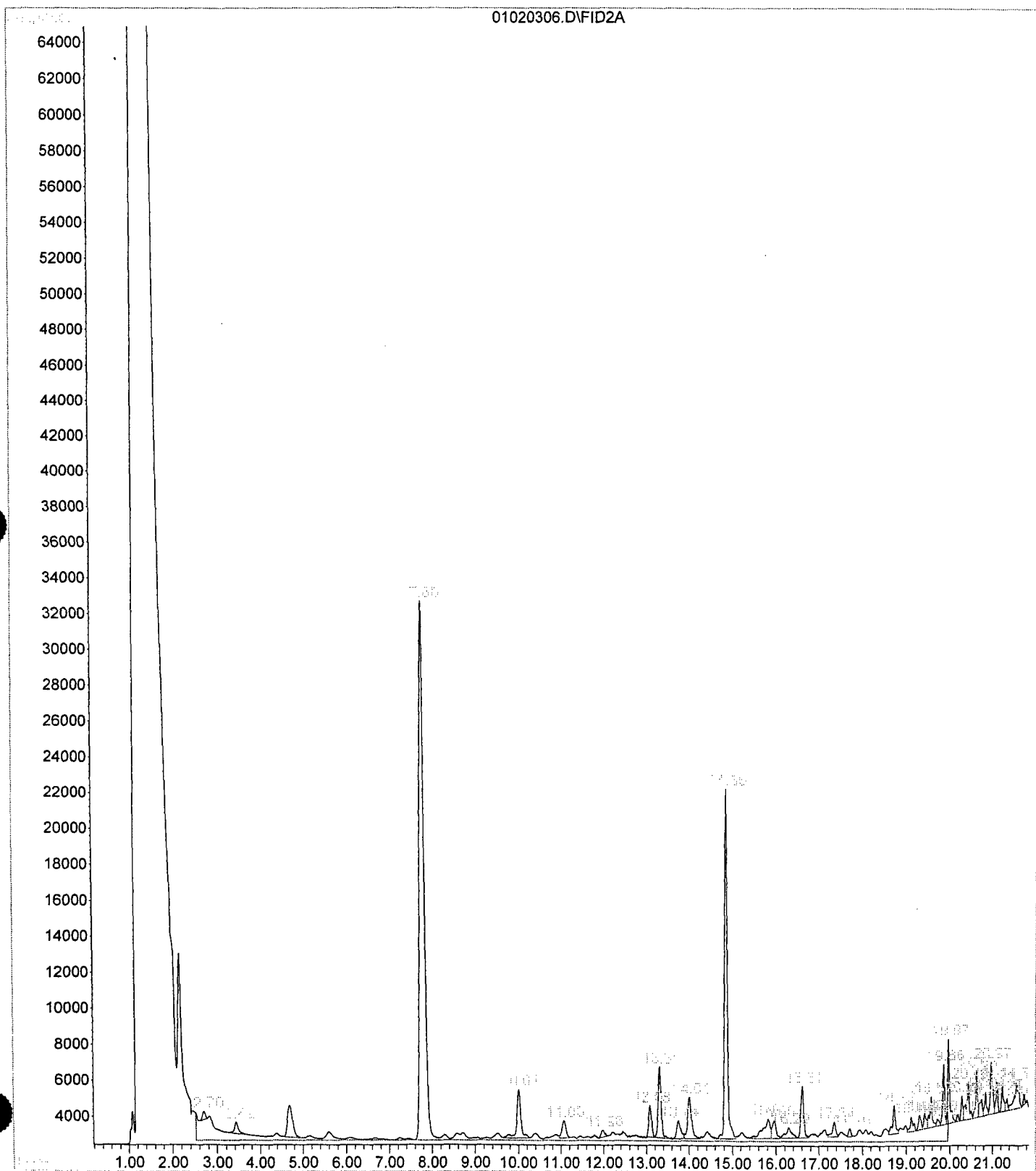
File : C:\HPCHEM\1\DATA\010203\01020303.D
Operator : BP
Acquired : 2 Jan 2003 10:18 using AcqMethod BTEX1118.M
Instrument : GC-2
Sample Name: Reagent Blank
Misc Info : 10uL GC4-74-08 / GC4-74-09
Vial Number: 3



File : C:\HPCHEM\1\DATA\010203\01020315.D
Operator : BP
Acquired : 2 Jan 2003 16:33 using AcqMethod BTEX1118.M
Instrument : GC-2
Sample Name: 212107-01 10X RR
Misc Info : 500uL
Vial Number: 15



File : C:\HPCHEM\1\DATA\010203\01020306.D
Operator : BP
Acquired : 2 Jan 2003 11:52 using AcqMethod BTEX1118.M
Instrument : GC-2
Sample Name: 212107-02 1X RR
Misc Info : 5mL
Vial Number: 6



APPENDIX B
Monitor Wells Laboratory Analyses
QA/QC Data and COC records

512 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072

August 14, 2002

Terry Griffin
BioTech Remediation, Inc.
501 Airport Drive, Suite 104
Farmington, NM 87401
TEL: (505) 327-4965
FAX: (505) 564-3604

RE: Thriftway Refinery, Bloomfield, NM

Order No.: 0207044

Dear Terry Griffin,

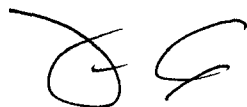
iiná bá, Ltd. received 17 samples on 07/26/2002 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

Sincerely,



David Cox

iiná bá

will sample

P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

*J. L. Leland
2/04/03*

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iiná bá, Ltd.

Date: 14-Aug-02

CLIENT: BioTech Remediation, Inc.
Project: Thriftway Refinery, Bloomfield, NM
Lab Order: 0207044

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

Any quality control and/or data qualifiers associated with this laboratory order will be flagged in the analytical result page(s) or the quality control summary report(s).

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-18
Lab ID:	0207044-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/25/2002 1:54:00 PM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	36	1		µg/L	1	08/07/2002
Benzene	6.9	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	1.1	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	0.7	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-19
Lab ID:	0207044-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/25/2002 2:16:00 PM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	610	5		µg/L	5	08/07/2002
Benzene	ND	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	0.9	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-05
Lab ID:	0207044-03A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/25/2002 2:37:00 PM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	51	1		µg/L	1	08/07/2002
Benzene	4.7	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	ND	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-04
Lab ID:	0207044-04A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/25/2002 2:56:00 PM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	31	1		µg/L	1	08/07/2002
Benzene	7.9	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	0.9	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	0.6	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-06
Lab ID:	0207044-05A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/26/2002 10:10:00 AM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: HNR
Methyl tert-Butyl Ether	23	1		µg/L	1	08/07/2002
Benzene	3.4	0.5		µg/L	1	08/07/2002
Toluene	0.7	0.5		µg/L	1	08/07/2002
Ethylbenzene	0.5	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-13
Lab ID:	0207044-06A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/26/2002 11:06:00 AM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: HNR
Methyl tert-Butyl Ether	ND	1		µg/L	1	08/07/2002
Benzene	ND	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	ND	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-12
Lab ID:	0207044-07A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/26/2002 11:21:00 AM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	140	1		µg/L	1	08/07/2002
Benzene	43	0.5		µg/L	1	08/07/2002
Toluene	1.7	0.5		µg/L	1	08/07/2002
Ethylbenzene	59	0.5		µg/L	1	08/07/2002
m,p-Xylene	110	1		µg/L	1	08/07/2002
o-Xylene	5.1	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-20
Lab ID:	0207044-08A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/26/2002 11:58:00 AM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	950	10		µg/L	10	08/07/2002
Benzene	ND	5		µg/L	10	08/07/2002
Toluene	ND	5		µg/L	10	08/07/2002
Ethylbenzene	ND	5		µg/L	10	08/07/2002
m,p-Xylene	ND	10		µg/L	10	08/07/2002
o-Xylene	ND	5		µg/L	10	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-21
Lab ID:	0207044-09A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/26/2002 12:20:00 PM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	34	5		µg/L	5	08/07/2002
Benzene	ND	2.5		µg/L	5	08/07/2002
Toluene	ND	2.5		µg/L	5	08/07/2002
Ethylbenzene	ND	2.5		µg/L	5	08/07/2002
m,p-Xylene	ND	5		µg/L	5	08/07/2002
o-Xylene	ND	2.5		µg/L	5	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-22
Lab ID:	0207044-10A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/26/2002 12:31:00 PM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: HNR
Methyl tert-Butyl Ether	14	1		µg/L	1	08/07/2002
Benzene	ND	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	ND	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-08
Lab ID:	0207044-11A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/26/2002 12:46:00 PM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: HNR
Methyl tert-Butyl Ether	1.4	1		µg/L	1	08/07/2002
Benzene	ND	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	ND	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-10
Lab ID:	0207044-12A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/26/2002 12:59:00 PM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: HNR
Methyl tert-Butyl Ether	ND	1		µg/L	1	08/07/2002
Benzene	ND	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	ND	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-11
Lab ID:	0207044-13A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/26/2002 1:10:00 PM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	ND	1		µg/L	1	08/07/2002
Benzene	ND	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	ND	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072

iiná bá

P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	MW-15
Lab ID:	0207044-14A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/26/2002 1:28:00 PM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: HNR
Methyl tert-Butyl Ether	ND	1		µg/L	1	08/07/2002
Benzene	ND	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	ND	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

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P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	Field Blank
Lab ID:	0207044-15A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/26/2002 1:31:00 PM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	ND	1		µg/L	1	08/07/2002
Benzene	ND	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	ND	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072

iiná bá

P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	Equipment Blank
Lab ID:	0207044-16A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/26/2002 1:36:00 PM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B				Analyst: HNR
Methyl tert-Butyl Ether	ND	1		µg/L	1	08/07/2002
Benzene	ND	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	ND	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072

iiná bá

P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

ANALYTICAL REPORT

Date: 14-Aug-02

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	0207044	Client Sample ID:	Trip Blank
Lab ID:	0207044-17A	Matrix:	AQUEOUS
Project:	Thriftway Refinery, Bloomfield, NM	Collection Date:	07/25/2002 11:40:00 AM
		COC Record:	11283

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HNR		
Methyl tert-Butyl Ether	ND	1		µg/L	1	08/07/2002
Benzene	ND	0.5		µg/L	1	08/07/2002
Toluene	ND	0.5		µg/L	1	08/07/2002
Ethylbenzene	ND	0.5		µg/L	1	08/07/2002
m,p-Xylene	ND	1		µg/L	1	08/07/2002
o-Xylene	ND	0.5		µg/L	1	08/07/2002

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted precision limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

MAINTAINING HARMONY BETWEEN MAN AND HIS ENVIRONMENT

iiiná bá, Ltd.

Date: 14-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207044

Project: Thriftway Refinery, Bloomfield, NM

QC SUMMARY REPORT

Method Blank

Sample ID: MB_020807	Batch ID: GC-1_020807	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/07/2002	Prep Date: 08/07/2002
Client ID:	0207044	Run ID: GC-1_020807A		SeqNo: 56311	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	ND	0.5			
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
Methyl tert-Butyl Ether	ND	1			
o-Xylene	ND	0.5			
Toluene	.0724	0.5			
1,4-Difluorobenzene	110.1	0			J
4-Bromochlorobenzene	120.1	0			
Fluorobenzene	113.8	0			

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

iiiná bá, Ltd.

Date: 14-Aug-02

CLIENT: BioTech Remediation, Inc.
Work Order: 0207044
Project: Thriftway Refinery, Bloomfield, NM

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0207044-08AMS		Batch ID: GC-1_020807		Test Code: SW8021B		Units: µg/L		Analysis Date: 08/07/2002			Prep Date: 08/07/2002		
Client ID: MW-20		0207044		Run ID: GC-1_020807A				SeqNo: 56296					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Benzene	372.6	5	400	0.75	93.0%	70	130						
Ethylbenzene	380.3	5	400	2.5	94.5%	70	130						
m,p-Xylene	755.2	10	800	2.8	94.1%	70	130						
Methyl tert-Butyl Ether	1366	10	400	970	99.1%	70	130						
o-Xylene	363.4	5	400	0	90.8%	70	130						
Toluene	370	5	400	1.1	92.2%	70	130						
1,4-Difluorobenzene	1089	0	1100	0	99.0%	70	130						
4-Bromochlorobenzene	1142	0	1100	0	103.9%	70	130						
Fluorobenzene	1119	0	1100	0	101.7%	70	130						

Sample ID: 0207044-08AMSD	Batch ID: GC-1_020807	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/07/2002	Prep Date: 08/07/2002						
Client ID: MW-20	0207044	Run ID: GC-1_020807A		SeqNo: 56297							
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	364	5	400	0.75	90.8%	70	130	372.6	2.3%	15	
Ethylbenzene	371.6	5	400	2.5	92.3%	70	130	380.3	2.3%	15	
m,p-Xylene	738.2	10	800	2.8	91.9%	70	130	755.2	2.3%	15	
Methyl tert-Butyl Ether	1349	10	400	970	94.8%	70	130	1366	1.2%	15	
o-Xylene	357.2	5	400	0	89.3%	70	130	363.4	1.7%	15	
Toluene	361.9	5	400	1.1	90.2%	70	130	370	2.2%	15	
1,4-Difluorobenzene	1082	0	1100	0	98.4%	70	130	0	0.0%	0	
4-Bromochlorobenzene	1159	0	1100	0	105.4%	70	130	0	0.0%	0	
Fluorobenzene	1118	0	1100	0	101.6%	70	130	0	0.0%	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

iiiná bá, Ltd.

Date: 14-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207044

Project: Thriftway Refinery, Bloomfield, NM

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS_020807		Batch ID: GC-1_020807		Test Code: SW8021B		Units: µg/L		Analysis Date: 08/07/2002			Prep Date: 08/07/2002	
Client ID:		0207044		Run ID: GC-1_020807A				SeqNo: 56310				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	34.62	0.5	40	0	86.6%	80	120					
Ethylbenzene	34.8	0.5	40	0	87.0%	80	120					
m,p-Xylene	69.41	1	80	0	86.8%	80	120					
Methyl tert-Butyl Ether	37.32	1	40	0	93.3%	80	120					
o-Xylene	33.6	0.5	40	0	84.0%	80	120					
Toluene	33.83	0.5	40	0.07	84.4%	80	120					
1,4-Difluorobenzene	109.7	0	110	0	99.7%	70	130					
4-Bromochlorobenzene	119.8	0	110	0	109.0%	70	130					
Fluorobenzene	112.9	0	110	0	102.7%	70	130					

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

ina bá, Ltd.

Date: 14-Aug-02

CLIENT: BioTech Remediation, Inc.

Work Order: 0207044

Project: Thriftway Refinery, Bloomfield, NM

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1_020807	Batch ID: GC-1_020807	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/07/2002	Prep Date: 08/07/2002						
Client ID: 0207044	Run ID: GC-1_020807A			SeqNo: 56307							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	16.87	0.5	20	0	84.3%	85	115				S
Ethylbenzene	16.99	0.5	20	0	84.9%	85	115				S
m,p-Xylene	34.21	1	40	0	85.5%	85	115				
Methyl tert-Butyl Ether	18.26	1	20	0	91.3%	85	115				
o-Xylene	16.31	0.5	20	0	81.5%	85	115				S
Toluene	16.44	0.5	20	0	82.2%	85	115				S
1,4-Difluorobenzene	109.9	0	110	0	100.0%	70	130				
4-Bromochlorobenzene	119.1	0	110	0	108.2%	70	130				
Fluorobenzene	113.9	0	110	0	103.5%	70	130				

ALL SAMPLES ✓

ALL ANALYZED

8/16/02

ALL SAMPLES
NE-ANALYZED
6/16/02

Sample ID: CCV2_020807		Batch ID: GC-1_020807		Test Code: SW8021B		Units: µg/L		Analysis Date: 08/07/2002				Prep Date: 08/07/2002	
Client ID:		Run ID: 0207044		GC-1_020807A				SeqNo: 56308					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Benzene	18.51	0.5	20	0	92.6%	85	115						
Ethylbenzene	18.66	0.5	20	0	93.3%	85	115						
m,p-Xylene	37.54	1	40	0	93.8%	85	115						
Methyl tert-Butyl Ether	19.36	1	20	0	96.8%	85	115						
o-Xylene	17.99	0.5	20	0	90.0%	85	115						
Toluene	18.1	0.5	20	0	90.5%	85	115						
1,4-Difluorobenzene	109.8	0	110	0	99.8%	70	130						
4-Bromochlorobenzene	115.4	0	110	0	104.9%	70	130						
Fluorobenzene	112.8	0	110	0	102.6%	70	130						

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 0207044

Project: Thriftway Refinery, Bloomfield, NM

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3_020807	Batch ID: GC-1_020807	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/07/2002	Prep Date: 08/07/2002
Client ID: 0207044	Run ID: GC-1_020807A	PQL	SPK value	SPK Ref Val	SeqNo: 56292
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	38.4	0.5	40	0	96.0% 85 115
Ethylbenzene	38.84	0.5	40	0	97.1% 85 115
m,p-Xylene	77.04	1	80	0	96.3% 85 115
Methyl tert-Butyl Ether	40.23	1	40	0	100.6% 85 115
o-Xylene	37.37	0.5	40	0	93.4% 85 115
Toluene	37.57	0.5	40	0	93.9% 85 115
1,4-Difluorobenzene	109.5	0	110	0	99.5% 70 130
4-Bromochlorobenzene	121.3	0	110	0	110.3% 70 130
Fluorobenzene	112.7	0	110	0	102.5% 70 130

Sample ID: CCV4_020807	Batch ID: GC-1_020807	Test Code: SW8021B	Units: µg/L	Analysis Date: 08/07/2002	Prep Date: 08/07/2002
Client ID: 0207044	Run ID: GC-1_020807A	PQL	SPK value	SPK Ref Val	SeqNo: 56309
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	17.35	0.5	20	0	86.7% 85 115
Ethylbenzene	17.38	0.5	20	0	86.9% 85 115
m,p-Xylene	34.85	1	40	0	87.1% 85 115
Methyl tert-Butyl Ether	19.26	1	20	0	96.3% 85 115
o-Xylene	17.08	0.5	20	0	85.4% 85 115
Toluene	17.24	0.5	20	0	86.2% 85 115
1,4-Difluorobenzene	110.5	0	110	0	100.5% 70 130
4-Bromochlorobenzene	121.4	0	110	0	110.3% 70 130
Fluorobenzene	113.4	0	110	0	103.1% 70 130

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
 Work Order: 0207044
 Project: Thriftway Refinery, Bloomfield, NM
 Test No: SW8021B

QC SUMMARY REPORT
SURROGATE RECOVERIES
 Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0207044-01A	99.4	104	103					
0207044-02A	99.1	104	103					
0207044-03A	100	105	104					
0207044-04A	99.3	110	102					
0207044-05A	99.7	104	103					
0207044-06A	100	106	104					
0207044-07A	97.1	112	101					
0207044-08A	101	111	104					
0207044-08AMS	99	104	102					
0207044-08AMSD	98.4	105	102					
0207044-09A	100	112	103					
0207044-10A	100	110	104					
0207044-11A	101	111	104					
0207044-12A	101	114	105					
0207044-13A	101	112	104					
0207044-14A	101	105	104					
0207044-15A	100	107	104					
0207044-16A	101	107	104					
0207044-17A	98.9	109	102					
0207046-01A	96.9	110	99.2					
0207046-02A	100	108	104					
0207047-01A	100	114	104					
CCV1_020807	100	108	104					
CCV2_020807	99.8	105	102					
CCV3_020807	99.5	110	102					
CCV4_020807	100	110	103					
LCS_020807	99.7	109	103					

Acronym

Surrogate

QC Limits

14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

CLIENT: BioTech Remediation, Inc.
Work Order: 0207044
Project: Thriftway Refinery, Bloomfield, NM
Test No: SW8021B

**QC SUMMARY REPORT
SURROGATE RECOVERIES**

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
MB_020807	100	109	103					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits



CHAIN OF CUSTODY RECORD

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

11283

Date: 7-25-02

Page: 1 of 2

Purchase Order No.: _____		Project No. 810		Name _____		Title _____	
SEND INVOICE TO		Company TERRY REEFER		Company _____		Company _____	
Address Blotelli Remediation		Dept. _____		Mailing Address _____		Mailing Address _____	
City, State, Zip 501 Airport Drive SW 401		City, State, Zip _____		City, State, Zip _____		City, State, Zip _____	
City, State, Zip Farmington, NM 87401		City, State, Zip _____		Telephone No. _____		Telephone No. _____	
PROJECT LOCATION: Thompson, Recovery, Brownsville, NM				ANALYSIS REQUESTED			
SAMPLER'S SIGNATURE: <i>[Signature]</i>				Number of Containers			
SAMPLE IDENTIFICATION				LAB ID			
DATE TIME MATRIX PRES.							
MW-18 7:25 1354 106 112							
MW-19 1437							
MW-05 1450							
MW-04 7:26 1411							
MW-13 1106							
MW-12 1131							
MW-30 1150							
MW-31 1226							
MW-27 1231							
MW-28 1241							
MW-29 1252							
Relinquished by: <i>[Signature]</i>				Received by: <i>[Signature]</i>			
Relinquished by:				Received by:			
Relinquished by:				Received by:			
Method of Shipment:				Rush 24-48 Hours 10 Working Days By Date			
Authorized by: _____ Date _____				Special Instructions / Remarks:			
(Client Signature Must Accompany Request)							

CHAIN OF CUSTODY RECORD

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Purchase Order No.:

**SEND
INVOICE
TO**

Name _____
Company Brown Remediation
Address _____
City, State, Zip _____

PROJECT LOCATION:

SAMPLER'S SIGNATURE:

18

SAMPLE IDENTIFICATION

[illegible]

ANALYSIS REQUESTED

Number of Containers

LAB ID

Relinquished by:

Relinquished by:

Relinquished by:

Method of Shipment:

Date/Time	7-1-99	Received by:	✓
-----------	--------	--------------	---

Date/Time	Received by:
-----------	--------------

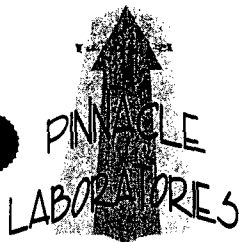
Date/Time	Received by:
-----------	--------------

Rush	24-48 Hours
------	-------------

Special Instructions / Remarks:

Authorized by: _____ Date: _____

(Client Signature Must Accompany Request)



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **211203**
December 16, 2002

BIOTECH REMEDIATION
501 AIRPORT DRIVE SUITE 104
FARMINGTON, NM 87401

Project Name REFINERY
Project Number 810

Attention: TERRY GRIFFIN

On 11/25/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 and pH analyses were performed by Pinnacle Laboratories, Inc. Albuquerque, NM.

EPA method 8270 SIMS analyses were performed by Environmental Services Laboratory, Inc. Portland, OR.

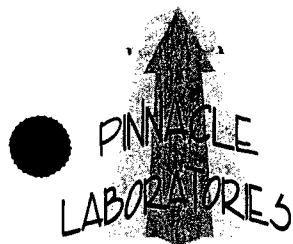
All remaining analyses were performed by Severn Trent Laboratories, Inc. Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

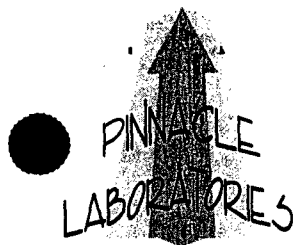
Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: BIOTECH REMEDIATION	PINNACLE ID	: 211203
PROJECT #	: 810	DATE RECEIVED	: 11/25/02
PROJECT NAME	: REFINERY	REPORT DATE	: 12/16/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
211203 - 01	MW-18	AQUEOUS	11/20/02
211203 - 02	MW-19	AQUEOUS	11/20/02
211203 - 03	MW-05	AQUEOUS	11/21/02
211203 - 04	MW-04	AQUEOUS	11/21/02
211203 - 05	MW-06	AQUEOUS	11/21/02
211203 - 06	MW-10	AQUEOUS	11/21/02
211203 - 07	MW-9	AQUEOUS	11/21/02
211203 - 08	MW-08	AQUEOUS	11/22/02
211203 - 09	MW-22	AQUEOUS	11/22/02
211203 - 10	MW-21	AQUEOUS	11/22/02
211203 - 11	AS-INFLUENT	AQUEOUS	11/22/02
211203 - 12	AS-EFFLUENT	AQUEOUS	11/22/02
211203 - 13	TRAVEL BLK	AQUEOUS	11/13/02
211203 - 14	TRAVEL BLK	AQUEOUS	11/12/02
211203 - 15	MW-20	AQUEOUS	11/22/02
211203 - 16	MW-11	AQUEOUS	11/21/02



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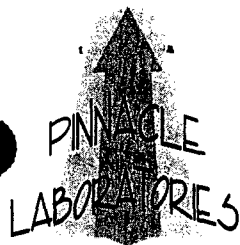
GENERAL CHEMISTRY RESULTS

CLIENT	: BIOTECH REMEDIATION	PINNACLE I.D.	: 211203
PROJECT #	: 810	DATE RECEIVED	: 11/25/02
PROJECT NAME	: REFINERY		

SAMPLE		MATRIX	DATE		DATE
ID. #	CLIENT I.D.		SAMPLED		ANALYZED
01	MW-18	AQUEOUS	11/20/02		11/27/02
02	MW-19	AQUEOUS	11/20/02		11/27/02
03	MW-05	AQUEOUS	11/21/02		11/27/02
PARAMETER		UNITS	MW-18	MW-19	MW-05
PH (150.1)		UNITS	7.66	7.63	7.96

CHEMIST NOTES:

N



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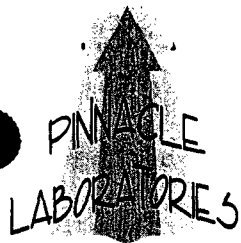
GENERAL CHEMISTRY RESULTS

CLIENT : BIOTECH REMEDIATION PINNACLE I.D. : 211203
PROJECT # : 810 DATE RECEIVED : 11/25/02
PROJECT NAME : REFINERY

SAMPLE			DATE	DATE	
ID. #	CLIENT I.D.	MATRIX	SAMPLED	ANALYZED	
04	MW-04	AQUEOUS	11/21/02	11/27/02	
05	MW-06	AQUEOUS	11/21/02	11/27/02	
06	MW-10	AQUEOUS	11/21/02	11/27/02	
PARAMETER		UNITS	MW-04	MW-06	MW-10
PH (150.1)		UNITS	7.36	7.73	7.53

CHEMIST NOTES:

N



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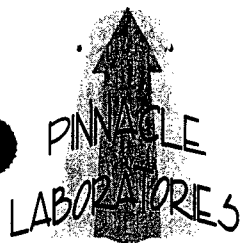
GENERAL CHEMISTRY RESULTS

CLIENT : BIOTECH REMEDIATION PINNACLE I.D. : 211203
PROJECT # : 810 DATE RECEIVED : 11/25/02
PROJECT NAME : REFINERY

SAMPLE			DATE	DATE	
ID. #	CLIENT I.D.	MATRIX	SAMPLED	ANALYZED	
07	MW-9	AQUEOUS	11/21/02	11/27/02	
08	MW-08	AQUEOUS	11/22/02	11/27/02	
09	MW-22	AQUEOUS	11/22/02	11/27/02	
PARAMETER		UNITS	MW-9	MW-08	MW-22
PH (150.1)		UNITS	7.59	6.96	7.05

CHEMIST NOTES:

N



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GENERAL CHEMISTRY RESULTS

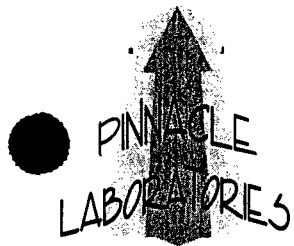
CLIENT : BIOTECH REMEDIATION PINNACLE I.D. : 211203
PROJECT # : 810 DATE RECEIVED : 11/25/02
PROJECT NAME : REFINERY

SAMPLE			DATE	DATE
ID. #	CLIENT I.D.	MATRIX	SAMPLED	ANALYZED
10	MW-21	AQUEOUS	11/22/02	11/27/02
11	AS-INFLUENT	AQUEOUS	11/22/02	11/27/02
12	AS-EFFLUENT	AQUEOUS	11/22/02	11/27/02

PARAMETER	UNITS	MW-21	AS-INFLUENT	AS-EFFLUENT
PH (150.1)	UNITS	7.05	7.28	7.80

CHEMIST NOTES:

N



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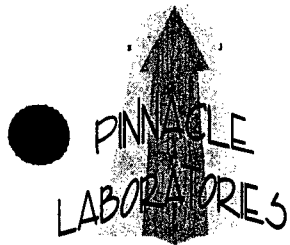
GENERAL CHEMISTRY RESULTS

CLIENT : BIOTECH REMEDIATION PINNACLE I.D. : 211203
PROJECT # : 810 DATE RECEIVED : 11/25/02
PROJECT NAME : REFINERY

SAMPLE		DATE		DATE
ID. #	CLIENT I.D.	MATRIX	SAMPLED	ANALYZED
15	MW-20	AQUEOUS	11/22/02	11/27/02
16	MW-11	AQUEOUS	11/21/02	11/27/02
PARAMETER		UNITS	MW-20	MW-11
PH (150.1)		UNITS	7.18	7.55

CHEMIST NOTES:

N/A



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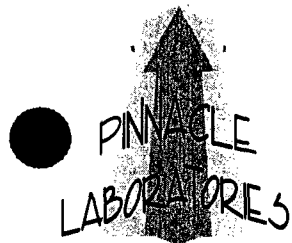
GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT	: BIOTECH REMEDIATION	PINNACLE I.D.	: 211203
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: REFINERY	DATE ANALYZED	: 11/27/02

PARAMETER	UNITS	PINNACLE I.D.	SAMPLE RESULT	DUP. RESULT	% RPD
PH	UNITS	211203-01	7.66	7.66	0

CHEMIST NOTES:
N/A

RPD (Relative Percent Difference) =
$$\frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



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GENERAL CHEMISTRY - QUALITY CONTROL

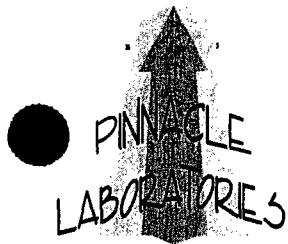
CLIENT : BIOTECH REMEDIATION PINNACLE I.D. : 211203
PROJECT # : 810 SAMPLE MATRIX : AQUEOUS
PROJECT NAME : REFINERY DATE ANALYZED : 11/27/02

PARAMETER	UNITS	PINNACLE I.D.	SAMPLE RESULT	DUP. RESULT	% RPD
pH	UNITS	211203-16	7.55	7.55	0

CHEMIST NOTES:

N/A

RPD (Relative Percent Difference) =
$$\frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : BIOTECH REMEDIATION
PROJECT # : 810
PROJECT NAME : REFINERY

PINNACLE I.D.: 211203

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	MW-18	AQUEOUS	11/20/02	NA	11/26/02	1
02	MW-19	AQUEOUS	11/20/02	NA	11/26/02	1
03	MW-05	AQUEOUS	11/21/02	NA	11/26/02	1
PARAMETER		DET. LIMIT	UNITS	MW-18	MW-19	MW-05
BENZENE		0.5	UG/L	5.0	< 0.5	5.1
TOLUENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES		1.0	UG/L	< 1.0	< 1.0	< 1.0
METHYL-t-BUTYL ETHER		2.5	UG/L	33	310 D 5	47

SURROGATE:

BROMOFLUOROBENZENE (%)

104

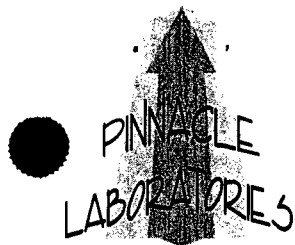
104

100

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

05 = Reported from a 5X dilution run on 11/27/02.



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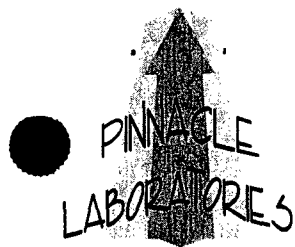
GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : BIOTECH REMEDIATION
PROJECT # : 810
PROJECT NAME : REFINERY

PINNACLE I.D.: 211203

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	MW-04	AQUEOUS	11/21/02	NA	11/26/02	1
05	MW-06	AQUEOUS	11/21/02	NA	11/26/02	1
06	MW-10	AQUEOUS	11/21/02	NA	11/26/02	1
PARAMETER		DET. LIMIT	UNITS	MW-04	MW-06	MW-10
BENZENE		0.5	UG/L	6.1	< 0.5	< 0.5
TOLUENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES		1.0	UG/L	1.1	< 1.0	< 1.0
METHYL-t-BUTYL ETHER		2.5	UG/L	18	30	< 2.5
SURROGATE:						
BROMOFLUOROBENZENE (%)				107	103	104
SURROGATE LIMITS (80 - 120)						

CHEMIST NOTES:
N/A



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GAS CHROMATOGRAPHY RESULTS

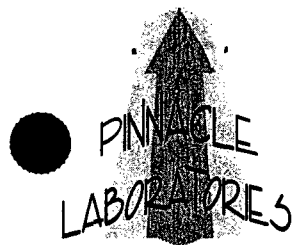
TEST : EPA 8021 MODIFIED
CLIENT : BIOTECH REMEDIATION
PROJECT # : 810
PROJECT NAME : REFINERY

PINNACLE I.D.: 211203

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
D. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
07	MW-9	AQUEOUS	11/21/02	NA	11/26/02	1
08	MW-08	AQUEOUS	11/22/02	NA	11/26/02	1
09	MW-22	AQUEOUS	11/22/02	NA	11/26/02	1
PARAMETER		DET. LIMIT	UNITS	MW-9	MW-08	MW-22
BENZENE		0.5	UG/L	< 0.5	0.9	< 0.5
TOLUENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES		1.0	UG/L	< 1.0	< 1.0	< 1.0
VALUYL-t-BUTYL ETHER		2.5	UG/L	< 2.5	230 D 5	14
SURROGATE:						
BROMOFLUOROBENZENE (%)				103	101	103
SURROGATE LIMITS		(80 - 120)				

CHEMIST NOTES:

05 = Reported from a 5X dilution run on 11/27/02.



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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : BIOTECH REMEDIATION
PROJECT # : 810
PROJECT NAME : REFINERY

PINNACLE I.D.: 211203

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
D. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
10	MW-21	AQUEOUS	11/22/02	NA	11/27/02	1
11	AS-INFLUENT	AQUEOUS	11/22/02	NA	11/29/02	20
12	AS-EFFLUENT	AQUEOUS	11/22/02	NA	11/29/02	1
PARAMETER		DET. LIMIT	UNITS	MW-21	AS-INFLUENT	AS-EFFLUENT
BENZENE		0.5	UG/L	1.4	340	< 0.5
TOLUENE		0.5	UG/L	< 0.5	150	< 0.5
ETHYLBENZENE		0.5	UG/L	< 0.5	260	< 0.5
TOTAL XYLENES		1.0	UG/L	< 1.0	470	< 1.0
METHYL-t-BUTYL ETHER		2.5	UG/L	34	86	< 2.5

SURROGATE:

BROMOFLUOROBENZENE (%)

105

106

107

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : BIOTECH REMEDIATION
PROJECT # : 810
PROJECT NAME : REFINERY

PINNACLE I.D.: 211203

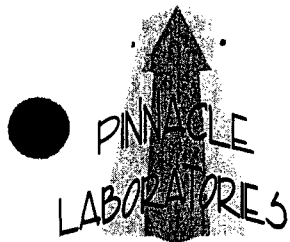
SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
D. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
13	TRAVEL BLK	AQUEOUS	11/13/02	NA	11/26/02	1
14	TRAVEL BLK	AQUEOUS	11/12/02	NA	11/26/02	1
15	MW-20	AQUEOUS	11/22/02	NA	11/27/02	1
PARAMETER		DET. LIMIT	UNITS	TRAVEL BLK	TRAVEL BLK	MW-20
BENZENE		0.5	UG/L	< 0.5	< 0.5	1.6
TOLUENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE		0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES		1.0	UG/L	< 1.0	< 1.0	2.0
METHYL-t-BUTYL ETHER		2.5	UG/L	< 2.5	< 2.5	350 D 5

SURROGATE:

BROMOFLUOROBENZENE (%)		104	104	106
SURROGATE LIMITS	(80 - 120)			

CHEMIST NOTES:

D 5 = Reported from a 5X dilution run on 11/29/02.



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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : BIOTECH REMEDIATION
PROJECT # : 810
PROJECT NAME : REFINERY

PINNACLE I.D.: 211203

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
16	MW-11	AQUEOUS	11/21/02	NA	11/27/02	1
PARAMETER		DET. LIMIT	UNITS	MW-11	MW-19	MW-05
BENZENE		0.5	UG/L	< 0.5		
TOLUENE		0.5	UG/L	0.6		
ETHYLBENZENE		0.5	UG/L	< 0.5		
TOTAL XYLENES		1.0	UG/L	< 1.0		
METHYL-t-BUTYL ETHER		2.5	UG/L	< 2.5		

SURROGATE:

BROMOFLUOROBENZENE (%)

102

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 211203
BLANK I. D.	: 112602	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 11/26/02
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: REFINERY		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0
METHYL-t-BUTYL ETHER	UG/L	<2.5

SURROGATE:

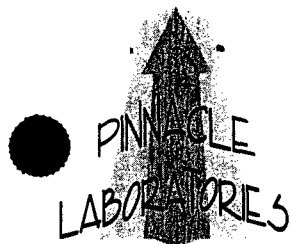
3,5-DIFLUOROBENZENE (%)

100

SURROGATE LIMITS: (80 - 120)

CHEMIST NOTES:

N/A



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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 211203
BLANK I. D.	: 112702	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 11/27/02
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: REFINERY		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0
METHYL-t-BUTYL ETHER	UG/L	<2.5

SURROGATE:

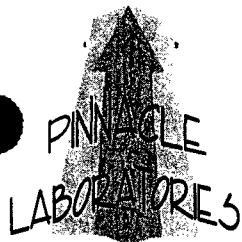
BROMOFLUOROBENZENE (%)

106

SURROGATE LIMITS: (80 - 120)

CHEMIST NOTES:

N/A



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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 211203
BLANK I. D.	: 112902	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 11/29/02
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: REFINERY		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0
METHYL-t-BUTYL ETHER	UG/L	<2.5

SURROGATE:

BROMOFLUOROBENZENE (%)

103

SURROGATE LIMITS: (80 - 120)

CHEMIST NOTES:

N/A



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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST : EPA 8021 MODIFIED
BATCH # : 112602
CLIENT : BIOTECH REMEDIATION
PROJECT # : 810
PROJECT NAME : REFINERY

PINNACLE I.D. : 211203
DATE EXTRACTED : N/A
DATE ANALYZED : 11/26/02
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	20.2	101	20.2	101	0	(80 - 120)	20
TOLUENE	<0.5	20.0	21.0	105	20.7	104	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.1	111	21.8	109	1	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	66.4	111	65.5	109	1	(80 - 120)	20
METHYL-t-BUTYL ETHER	<2.5	20.0	19.6	98	20.1	101	3	(70 - 133)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

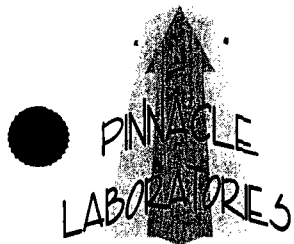
TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 211203
BATCH #	: 112702	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 11/27/02
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: REFINERY	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	20.4	102	20.4	102	0	(80 - 120)	20
TOLUENE	<0.5	20.0	20.7	104	20.7	104	0	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.7	109	21.7	109	0	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	64.6	108	64.4	107	0	(80 - 120)	20
METHYL-t-BUTYL ETHER	<2.5	20.0	19.6	98	20.3	102	4	(70 - 133)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

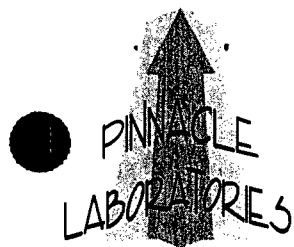
TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 211203
BATCH #	: 112902	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 11/29/02
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: REFINERY	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	20.5	103	20.6	103	0	(80 - 120)	20
TOLUENE	<0.5	20.0	20.9	105	21.0	105	0	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.9	110	22.5	113	3	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	65.2	109	66.3	111	2	(80 - 120)	20
METHYL-t-BUTYL ETHER	<2.5	20.0	20.7	104	19.9	100	4	(70 - 133)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 211203
MSMSD #	: 211203-01	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 11/26/02
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: REFINERY	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	DPD LIMITS
BENZENE	5.0	20.0	25.6	103	25.0	100	2	(80 - 120)	20
TOLUENE	<0.5	20.0	20.9	105	20.5	103	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.0	110	21.6	108	2	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	65.7	110	64.6	108	2	(80 - 120)	20
METHYL-t-BUTYL ETHER	33	20.0	56.6	118	55.7	114	2	(70 - 133)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



Environmental Services Laboratory, Inc.

17400 SW Upper Boones Ferry Road, Suite 270 • Portland, OR 97224 • (503) 670-8520

December 02, 2002

Jacinta A. Tenorio
Pinnacle Laboratories
2709-D Pan American Fwy NE
Albuquerque, NM 87107

TEL: 505-344-3777

FAX (505) 344-4413

RE: 211203/BIO

Order No.: 0211254

Dear Jacinta A. Tenorio:

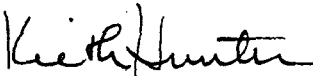
Environmental Services Laboratory received 14 samples on 11/26/02 for the analyses presented in the following report.

There were no analytical problems encountered and all associated QC data met EPA or laboratory specifications except where noted in a Case Narrative. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety, without the written approval of the laboratory. The following checked data sections are included in this report, and numbered to indicate total pages contained within each report section.

☒ Base Sample Report ☒ Method Blank Report ☒ Sample Duplicate Report ☒ Matrix Spike/Matrix Spike Duplicate Report ☒ Laboratory Control Spike/Spike Duplicate Report
☒ Continuing Calibration Verification Report ☐ Initial Calibration Verification Report

If you have any questions regarding these tests results, please feel free to call.


Project Manager


Technical Review

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories
Lab Order: 0211254
Project: 211203/BIO
Lab ID: 0211254-01A

Client Sample ID: MW-18/211203-01
Tag Number:
Collection Date: 11/20/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	0.64	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	ND	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	1.5	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	73.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	73.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	0	35-114	S, MI	%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories
Lab Order: 0211254
Project: 211203/BIO
Lab ID: 0211254-02A

Client Sample ID: MW-19/211203-02
Tag Number:
Collection Date: 11/20/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS						
		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	ND	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	66.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	72.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	79.0	35-114		%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories

Client Sample ID: MW-05/211203-03

Lab Order: 0211254

Tag Number:

Project: 211203/BIO

Collection Date: 11/21/02

Lab ID: 0211254-03A

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	ND	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	67.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	76.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	86.0	35-114		%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories
Lab Order: 0211254
Project: 211203/BIO
Lab ID: 0211254-04A

Client Sample ID: MW-04/211203-04
Tag Number:
Collection Date: 11/21/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	ND	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	66.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	82.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	84.0	35-114		%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories
Lab Order: 0211254
Project: 211203/BIO
Lab ID: 0211254-05A

Client Sample ID: MW-06/211203-05
Tag Number:
Collection Date: 11/21/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS						
		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	ND	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	65.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	73.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	76.0	35-114		%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories

Client Sample ID: MW-10/211203-06

Lab Order: 0211254

Tag Number:

Project: 211203/BIO

Collection Date: 11/21/02

Lab ID: 0211254-06A

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	ND	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	63.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	74.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	82.0	35-114		%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories
Lab Order: 0211254
Project: 211203/BIO
Lab ID: 0211254-07A

Client Sample ID: MW-9/211203-07
Tag Number:
Collection Date: 11/21/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM	(3510C)	Analyst: mrs		
1-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	ND	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	65.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	78.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	83.0	35-114		%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories
Lab Order: 0211254
Project: 211203/BIO
Lab ID: 0211254-08A

Client Sample ID: MW-08/211203-08
Tag Number:
Collection Date: 11/22/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	ND	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	64.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	76.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	77.0	35-114		%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories
Lab Order: 0211254
Project: 211203/BIO
Lab ID: 0211254-09A

Client Sample ID: MW-22/211203-09
Tag Number:
Collection Date: 11/22/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM	(3510C)	Analyst: mrs		
1-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	ND	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	64.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	77.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	80.0	35-114		%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories
Lab Order: 0211254
Project: 211203/BIO
Lab ID: 0211254-10A

Client Sample ID: MW-21/211203-10
Tag Number:
Collection Date: 11/22/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM	(3510C)	Analyst: mrs		
1-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	ND	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	52.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	73.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	58.0	35-114		%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories
Lab Order: 0211254
Project: 211203/BIO
Lab ID: 0211254-11A

Client Sample ID: AS-INFLUENT/211203-11
Tag Number:
Collection Date: 11/22/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	28	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	24	0.40		µg/L	4	11/27/02
Acenaphthene	0.48	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	3.2	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	42	0.40		µg/L	4	11/27/02
Phenanthrene	1.8	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	66.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	76.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	0	35-114	S, MI	%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories

Client Sample ID: AS-EFFLUENT/211203-12

Lab Order: 0211254

Tag Number:

Project: 211203/BIO

Collection Date: 11/22/02

Lab ID: 0211254-12A

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	0.40	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	0.64	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	68.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	75.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	83.0	35-114		%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories

Client Sample ID: MW-20/211203-15

Lab Order: 0211254

Tag Number:

Project: 211203/BIO

Collection Date: 11/22/02

Lab ID: 0211254-13A

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	1.6	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	ND	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	68.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	78.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	0	35-114	S, MI	%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories
Lab Order: 0211254
Project: 211203/BIO
Lab ID: 0211254-14A

Client Sample ID: MW-11/211203-16
Tag Number:
Collection Date: 11/21/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS						
		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
2-Methylnaphthalene	ND	0.40		µg/L	4	11/27/02
Acenaphthene	ND	0.40		µg/L	4	11/27/02
Acenaphthylene	ND	0.40		µg/L	4	11/27/02
Anthracene	ND	0.40		µg/L	4	11/27/02
Benz(a)anthracene	ND	0.40		µg/L	4	11/27/02
Benzo(a)pyrene	ND	0.40		µg/L	4	11/27/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	11/27/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	11/27/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	11/27/02
Chrysene	ND	0.40		µg/L	4	11/27/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	11/27/02
Fluoranthene	ND	0.40		µg/L	4	11/27/02
Fluorene	ND	0.40		µg/L	4	11/27/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	11/27/02
Naphthalene	ND	0.40		µg/L	4	11/27/02
Phenanthrene	ND	0.40		µg/L	4	11/27/02
Pyrene	ND	0.40		µg/L	4	11/27/02
Surr: 2-Fluorobiphenyl	68.0	43-116		%REC	4	11/27/02
Surr: 4-Terphenyl-d14	78.0	33-141		%REC	4	11/27/02
Surr: Nitrobenzene-d5	66.0	35-114		%REC	4	11/27/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 02-Dec-02

CLIENT: Pinnacle Laboratories

Work Order: 0211254

Project: 211203/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: MB-5149	SampleType: MBLK	TestCode: 06 PAH A	Units: µg/L	Prep Date: 11/26/02	Run ID: HEISENBURG_021127A						
Client ID: ZZZZZ	Batch ID: 5149	TestNo: 8270-SIM	(3510C)	Analysis Date: 11/27/02	SeqNo: 149589						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1-Methylnaphthalene	ND	0.10									
2-Methylnaphthalene	ND	0.10									
Acenaphthene	ND	0.10									
Acenaphthylene	ND	0.10									
Anthracene	ND	0.10									
Benz(a)anthracene	ND	0.10									
Benzo(a)pyrene	ND	0.10									
Benzo(b)fluoranthene	ND	0.10									
Benzo(g,h,i)perylene	ND	0.10									
Benzo(k)fluoranthene	ND	0.10									
Chrysene	ND	0.10									
Dibenz(a,h)anthracene	ND	0.10									
Fluoranthene	ND	0.10									
Fluorene	ND	0.10									
Indeno(1,2,3-cd)pyrene	ND	0.10									
Naphthalene	ND	0.10									
Phenanthrene	ND	0.10									
Pyrene	ND	0.10									
Surr: 2-Fluorobiphenyl	0.62	0	1	0	62	43	116	0	0	0	
Surr: 4-Terphenyl-d14	0.78	0	1	0	78	33	141	0	0	0	
Surr: Nitrobenzene-d5	0.77	0	1	0	77	35	114	0	0	0	

Sample ID: MB-5154	SampleType: MBLK	TestCode: 06 PAH A	Units: µg/L	Prep Date: 11/27/02	Run ID: HEISENBURG_021127B						
Client ID: ZZZZZ	Batch ID: 5154	TestNo: 8270-SIM	(3510C)	Analysis Date: 11/27/02	SeqNo: 149617						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1-Methylnaphthalene	ND	0.10									
2-Methylnaphthalene	ND	0.10									
Acenaphthene	ND	0.10									
Acenaphthylene	ND	0.10									

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Page 1 of 10

CLIENT: Pinnacle Laboratories

Work Order: 0211254

Project: 211203/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: MB-5154	SampType: MBLK	TestCode: 06 PAH A	Units: µg/L	Prep Date: 11/27/02	Run ID: HEISENBURG_021127B						
Client ID: ZZZZZ	Batch ID: 5154	TestNo: 8270-SIM	(3510C)	Analysis Date: 11/27/02	SeqNo: 149617						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Anthracene	ND	0.10									
Benz(a)anthracene	ND	0.10									
Benzo(a)pyrene	ND	0.10									
Benzo(b)fluoranthene	ND	0.10									
Benzo(g,h,i)perylene	ND	0.10									
Benzo(k)fluoranthene	ND	0.10									
Chrysene	ND	0.10									
Dibenz(a,h)anthracene	ND	0.10									
Fluoranthene	ND	0.10									
Fluorene	ND	0.10									
Indeno(1,2,3-cd)pyrene	ND	0.10									
Naphthalene	ND	0.10									
Phenanthrene	ND	0.10									
Pyrene	ND	0.10									
Surr: 2-Fluorobiphenyl	0.67	0	1	0	67	43	116	0	0	0	
Surr: 4-Terphenyl-d14	0.86	0	1	0	86	33	141	0	0	0	
Surr: Nitrobenzene-d5	0.81	0	1	0	81	35	114	0	0	0	

Sample ID: LCS-5149	SampType: LCS	TestCode: 06 PAH A	Units: µg/L	Prep Date: 11/26/02	Run ID: HEISENBURG_021127A						
Client ID: ZZZZZ	Batch ID: 5149	TestNo: 8270-SIM	(3510C)	Analysis Date: 11/27/02	SeqNo: 149590						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1-Methylnaphthalene	0.65	0.10	1	0	65	21	133	0	0	0	
2-Methylnaphthalene	0.63	0.10	1	0	63	21	133	0	0	0	
Acenaphthene	0.79	0.10	1	0	79	47	145	0	0	0	
Acenaphthylene	0.71	0.10	1	0	71	33	145	0	0	0	
Anthracene	0.65	0.10	1	0	65	27	133	0	0	0	
Benz(a)anthracene	0.72	0.10	1	0	72	33	143	0	0	0	
Benzo(a)pyrene	0.75	0.10	1	0	75	17	163	0	0	0	
Benzo(b)fluoranthene	0.66	0.10	1	0	66	24	159	0	0	0	
Benzo(g,h,i)perylene	0.77	0.10	1	0	77	1	219	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0211254
 Project: 211203/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: LCS-5149	SampType: LCS	TestCode: 06 PAH A	Units: µg/L	Prep Date: 11/26/02	Run ID: HEISENBURG_021127A						
Client ID: ZZZZZ	Batch ID: 5149	TestNo: 8270-SIM	(3510C)	Analysis Date: 11/27/02	SeqNo: 149590						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(k)fluoranthene	0.72	0.10	1	0	72	11	162	0	0		
Chrysene	0.76	0.10	1	0	76	17	168	0	0		
Dibenz(a,h)anthracene	0.72	0.10	1	0	72	1	227	0	0		
Fluoranthene	0.84	0.10	1	0	84	26	137	0	0		
Fluorene	0.8	0.10	1	0	80	59	121	0	0		
Indeno(1,2,3-cd)pyrene	0.75	0.10	1	0	75	1	171	0	0		
Naphthalene	0.79	0.10	1	0	79	21	133	0	0		
Phenanthrene	0.87	0.10	1	0	87	54	120	0	0		
Pyrene	0.79	0.10	1	0	79	52	115	0	0		
Surr: 2-Fluorobiphenyl	0.63	0	1	0	63	43	116	0	0		
Surr: 4-Terphenyl-d14	0.73	0	1	0	73	33	141	0	0		
Surr: Nitrobenzene-d5	0.76	0	1	0	76	35	114	0	0		

Sample ID: LCS-5154	SampType: LCS	TestCode: 06 PAH A	Units: µg/L	Prep Date: 11/27/02	Run ID: HEISENBURG_021127B						
Client ID: ZZZZZ	Batch ID: 5154	TestNo: 8270-SIM	(3510C)	Analysis Date: 11/27/02	SeqNo: 149618						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	0.58	0.10	1	0	58	21	133	0	0		
2-Methylnaphthalene	0.56	0.10	1	0	56	21	133	0	0		
Acenaphthene	0.75	0.10	1	0	75	47	145	0	0		
Acenaphthylene	0.67	0.10	1	0	67	33	145	0	0		
Anthracene	0.65	0.10	1	0	65	27	133	0	0		
Benz(a)anthracene	0.72	0.10	1	0	72	33	143	0	0		
Benzo(a)pyrene	0.76	0.10	1	0	76	17	163	0	0		
Benzo(b)fluoranthene	0.65	0.10	1	0	65	24	159	0	0		
Benzo(g,h,i)perylene	0.72	0.10	1	0	72	1	219	0	0		
Benzo(k)fluoranthene	0.79	0.10	1	0	79	11	162	0	0		
Chrysene	0.77	0.10	1	0	77	17	168	0	0		
Dibenz(a,h)anthracene	0.67	0.10	1	0	67	1	227	0	0		
Fluoranthene	0.85	0.10	1	0	85	26	137	0	0		
Fluorene	0.79	0.10	1	0	79	59	121	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0211254
 Project: 211203/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: LCS-5154	SampleType: LCS	TestCode: 06 PAH A		Units: µg/L	Prep Date: 11/27/02	Run ID: HEISENBURG_021127B					
Client ID: ZZZZZ	Batch ID: 5154	TestNo: 8270-SIM		(3510C)	Analysis Date: 11/27/02	SeqNo: 149618					
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	0.7	0.10	1	0	70	1	171	0	0		
Naphthalene	0.69	0.10	1	0	69	21	133	0	0		
Phenanthrene	0.85	0.10	1	0	85	54	120	0	0		
Pyrene	0.8	0.10	1	0	80	52	115	0	0		
Surr: 2-Fluorobiphenyl	0.54	0	1	0	54	43	116	0	0		
Surr: 4-Terphenyl-d14	0.72	0	1	0	72	33	141	0	0		
Surr: Nitrobenzene-d5	0.66	0	1	0	66	35	114	0	0		

Sample ID: LCSD-5149	Sample Type: LCSD	TestCode: 06 PAH A	Units: µg/L	Prep Date: 11/26/02	Run ID: HEISENBURG_021127A						
Client ID: ZZZZZ	Batch ID: 5149	TestNo: 8270-SIM	(3510C)	Analysis Date: 11/27/02	SeqNo: 149591						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1-Methylnaphthalene	0.63	0.10	1	0	63	21	133	0.65	3.12	0	
2-Methylnaphthalene	0.6	0.10	1	0	60	21	133	0.63	4.88	0	
Acenaphthene	0.75	0.10	1	0	75	47	145	0.79	5.19	30	
Acenaphthylene	0.69	0.10	1	0	69	33	145	0.71	2.86	30	
Anthracene	0.64	0.10	1	0	64	27	133	0.65	1.55	30	
Benz(a)anthracene	0.71	0.10	1	0	71	33	143	0.72	1.40	30	
Benzo(a)pyrene	0.72	0.10	1	0	72	17	163	0.75	4.08	30	
Benzo(b)fluoranthene	0.67	0.10	1	0	67	24	159	0.66	1.50	30	
Benzo(g,h,i)perylene	0.7	0.10	1	0	70	1	219	0.77	9.52	30	
Benzo(k)fluoranthene	0.71	0.10	1	0	71	11	162	0.72	1.40	30	
Chrysene	0.75	0.10	1	0	75	17	168	0.76	1.32	30	
Dibenz(a,h)anthracene	0.62	0.10	1	0	62	1	227	0.72	14.9	30	
Fluoranthene	0.82	0.10	1	0	82	26	137	0.84	2.41	30	
Fluorene	0.77	0.10	1	0	77	59	121	0.8	3.82	30	
Indeno(1,2,3-cd)pyrene	0.68	0.10	1	0	68	1	171	0.75	9.79	30	
Naphthalene	0.73	0.10	1	0	73	21	133	0.79	7.89	30	
Phenanthrene	0.83	0.10	1	0	83	54	120	0.87	4.71	30	
Pyrene	0.8	0.10	1	0	80	52	115	0.79	1.26	30	
Surr: 2-Fluorobiphenyl	0.6	0	1	0	60	43	116	0	0	30	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0211254
 Project: 211203/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: LCSD-5149	SampType: LCSD	TestCode: 06 PAH A	Units: µg/L	Prep Date: 11/26/02	Run ID: HEISENBURG_021127A						
Client ID: ZZZZZ	Batch ID: 5149	TestNo: 8270-SIM	(3510C)	Analysis Date: 11/27/02	SeqNo: 149591						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Terphenyl-d14	0.73	0	1	0	73	33	141	0	0	30	
Surr: Nitrobenzene-d5	0.74	0	1	0	74	35	114	0	0	30	

Sample ID: LCSD-5154	SampType: LCSD	TestCode: 06 PAH A	Units: µg/L	Prep Date: 11/27/02	Run ID: HEISENBURG_021127B						
Client ID: ZZZZZ	Batch ID: 5154	TestNo: 8270-SIM	(3510C)	Analysis Date: 11/27/02	SeqNo: 149619						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1-Methylnaphthalene	0.7	0.10	1	0	70	21	133	0.58	18.8	30	
2-Methylnaphthalene	0.68	0.10	1	0	68	21	133	0.56	19.4	30	
Acenaphthene	0.86	0.10	1	0	86	47	145	0.75	13.7	30	
Acenaphthylene	0.77	0.10	1	0	77	33	145	0.67	13.9	30	
Anthracene	0.69	0.10	1	0	69	27	133	0.65	5.97	30	
Benz(a)anthracene	0.76	0.10	1	0	76	33	143	0.72	5.41	30	
Benzo(a)pyrene	0.83	0.10	1	0	83	17	163	0.76	8.81	30	
Benzo(b)fluoranthene	0.71	0.10	1	0	71	24	159	0.65	8.82	30	
Benzo(g,h,i)perylene	0.87	0.10	1	0	87	1	219	0.72	18.9	30	
Benzo(k)fluoranthene	0.87	0.10	1	0	87	11	162	0.79	9.64	30	
Chrysene	0.86	0.10	1	0	86	17	168	0.77	11.0	30	
Dibenz(a,h)anthracene	0.75	0.10	1	0	75	1	227	0.67	11.3	30	
Fluoranthene	0.91	0.10	1	0	91	26	137	0.85	6.82	30	
Fluorene	0.87	0.10	1	0	87	59	121	0.79	9.64	30	
Indeno(1,2,3-cd)pyrene	0.81	0.10	1	0	81	1	171	0.7	14.6	30	
Naphthalene	0.73	0.10	1	0	73	21	133	0.69	5.63	30	
Phenanthrene	0.93	0.10	1	0	93	54	120	0.85	8.99	30	
Pyrene	0.97	0.10	1	0	97	52	115	0.8	19.2	30	
Surr: 2-Fluorobiphenyl	0.65	0	1	0	65	43	116	0	0	30	
Surr: 4-Terphenyl-d14	0.89	0	1	0	89	33	141	0	0	30	
Surr: Nitrobenzene-d5	0.74	0	1	0	74	35	114	0	0	30	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0211254
 Project: 211203/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: 0211254-04A MS		SampType: MS	TestCode: 06 PAH A		Units: µg/L	Prep Date: 11/26/02		Run ID: HEISENBURG_021127A			
Client ID: MW-04/211203-04		Batch ID: 5149	TestNo: 8270-SIM		(3510C)	Analysis Date: 11/27/02		SeqNo: 149600			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	2.6	0.40	4	0	65	21	133	0	0		
2-Methylnaphthalene	2.88	0.40	4	0	72	21	133	0	0		
Acenaphthene	3.4	0.40	4	0	85	47	145	0	0		
Acenaphthylene	3.28	0.40	4	0	82	33	145	0	0		
Anthracene	3.08	0.40	4	0	77	27	133	0	0		
Benz(a)anthracene	3.48	0.40	4	0	87	33	143	0	0		
Benzo(a)pyrene	3.28	0.40	4	0	82	17	163	0	0		
Benzo(b)fluoranthene	3.08	0.40	4	0	77	24	159	0	0		
Benzo(g,h,i)perylene	3.32	0.40	4	0	83	1	219	0	0		
Benzo(k)fluoranthene	3.08	0.40	4	0	77	11	162	0	0		
Chrysene	3.08	0.40	4	0	77	17	168	0	0		
Dibenz(a,h)anthracene	3.16	0.40	4	0	79	1	227	0	0		
Fluoranthene	3.6	0.40	4	0	90	26	137	0	0		
Fluorene	3.52	0.40	4	0	88	59	121	0	0		
Indeno(1,2,3-cd)pyrene	3.32	0.40	4	0	83	1	171	0	0		
Naphthalene	3.32	0.40	4	0	83	21	133	0	0		
Phenanthrene	3.92	0.40	4	0	98	54	120	0	0		
Pyrene	3.36	0.40	4	0	84	52	115	0	0		
Surr: 2-Fluorobiphenyl	2.32	0	4	0	58	43	116	0	0		
Surr: 4-Terphenyl-d14	2.6	0	4	0	65	33	141	0	0		
Surr: Nitrobenzene-d5	3.52	0	4	0	88	35	114	0	0		

Sample ID: 0211253-06A MS	SampType: MS	TestCode: 06 PAH A	Units: µg/L	Prep Date: 11/27/02	Run ID: HEISENBURG_021127B						
Client ID: ZZZZZ	Batch ID: 5154	TestNo: 8270-SIM	(3510C)	Analysis Date: 11/27/02	SeqNo: 149624						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	10.3	0.40	4	7.32	75	21	133	0	0		
2-Methylnaphthalene	6.2	0.40	4	2.72	87	21	133	0	0		
Acenaphthene	3.28	0.40	4	0	82	47	145	0	0		
Acenaphthylene	3.04	0.40	4	0	76	33	145	0	0		
Anthracene	2.96	0.40	4	0	74	27	133	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0211254
 Project: 211203/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: 0211253-06A MS		SampType: MS		TestCode: 06 PAH A		Units: µg/L		Prep Date: 11/27/02		Run ID: HEISENBURG_021127B	
Client ID: ZZZZZ		Batch ID: 5154		TestNo: 8270-SIM		(3510C)		Analysis Date: 11/27/02		SeqNo: 149624	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benz(a)anthracene	3.04	0.40	4	0	76	33	143	0	0		
Benzo(a)pyrene	3.16	0.40	4	0	79	17	163	0	0		
Benzo(b)fluoranthene	2.68	0.40	4	0	67	24	159	0	0		
Benzo(g,h,i)perylene	2.8	0.40	4	0	70	1	219	0	0		
Benzo(k)fluoranthene	3.2	0.40	4	0	80	11	162	0	0		
Chrysene	3.2	0.40	4	0	80	17	168	0	0		
Dibenz(a,h)anthracene	2.52	0.40	4	0	63	1	227	0	0		
Fluoranthene	3.52	0.40	4	0	88	26	137	0	0		
Fluorene	3.48	0.40	4	0	87	59	121	0	0		
Indeno(1,2,3-cd)pyrene	2.64	0.40	4	0	66	1	171	0	0		
Naphthalene	35.9	0.40	4	30.7	130	21	133	0	0		
Phenanthrene	3.92	0.40	4	0	98	54	120	0	0		
Pyrene	3.64	0.40	4	0	91	52	115	0	0		
Surr: 2-Fluorobiphenyl	2.76	0	4	0	69	43	116	0	0		
Surr: 4-Terphenyl-d14	3.36	0	4	0	84	33	141	0	0		
Surr: Nitrobenzene-d5	3.32	0	4	0	83	35	114	0	0		

Sample ID: 0211254-10A DUP		SampType: DUP	TestCode: 06 PAH A		Units: µg/L	Prep Date: 11/26/02		Run ID: HEISENBURG_021127A			
Client ID: MW-21/211203-10		Batch ID: 5149	TestNo: 8270-SIM		(3510C)	Analysis Date: 11/27/02		SeqNo: 149607			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	ND	0.40	0	0	0	0	0	0	0	20	
2-Methylnaphthalene	ND	0.40	0	0	0	0	0	0	0	20	
Acenaphthene	ND	0.40	0	0	0	0	0	0	0	20	
Acenaphthylene	ND	0.40	0	0	0	0	0	0	0	20	
Anthracene	ND	0.40	0	0	0	0	0	0	0	20	
Benz(a)anthracene	ND	0.40	0	0	0	0	0	0	0	20	
Benzo(a)pyrene	ND	0.40	0	0	0	0	0	0	0	20	
Benzo(b)fluoranthene	ND	0.40	0	0	0	0	0	0	0	20	
Benzo(g,h,i)perylene	ND	0.40	0	0	0	0	0	0	0	20	
Benzo(k)fluoranthene	ND	0.40	0	0	0	0	0	0	0	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0211254
 Project: 211203/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: 0211254-10A DUP		SampType: DUP	TestCode: 06 PAH A		Units: µg/L	Prep Date: 11/26/02		Run ID: HEISENBURG_021127A			
Client ID: MW-21/211203-10		Batch ID: 5149	TestNo: 8270-SIM		(3510C)	Analysis Date: 11/27/02		SeqNo: 149607			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chrysene	ND	0.40	0	0	0	0	0	0	0	0	20
Dibenz(a,h)anthracene	ND	0.40	0	0	0	0	0	0	0	0	20
Fluoranthene	ND	0.40	0	0	0	0	0	0	0	0	20
Fluorene	ND	0.40	0	0	0	0	0	0	0	0	20
Indeno(1,2,3-cd)pyrene	ND	0.40	0	0	0	0	0	0	0	0	20
Naphthalene	ND	0.40	0	0	0	0	0	0	0	0	20
Phenanthrene	ND	0.40	0	0	0	0	0	0	0	0	20
Pyrene	ND	0.40	0	0	0	0	0	0	0	0	20
Surr: 2-Fluorobiphenyl	2.12	0	4	0	53	43	116	0	0	0	0
Surr: 4-Terphenyl-d14	3.04	0	4	0	76	33	141	0	0	0	0
Surr: Nitrobenzene-d5	2.4	0	4	0	60	35	114	0	0	0	0

Sample ID: 0211253-05A DUP		SampType: DUP		TestCode: 06 PAH A		Units: µg/L		Prep Date: 11/27/02		Run ID: HEISENBURG_021127B	
Client ID: ZZZZZ		Batch ID: 5154		TestNo: 8270-SIM		(3510C)		Analysis Date: 11/27/02		SeqNo: 149622	
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
1-Methylnaphthalene	7.76	0.40	0	0	0	0	0	7.44	4.21	0	0
2-Methylnaphthalene	6.92	0.40	0	0	0	0	0	6.88	0.580	0	0
Acenaphthene	ND	0.40	0	0	0	0	0	0	0	20	20
Acenaphthylene	ND	0.40	0	0	0	0	0	0	0	20	20
Anthracene	ND	0.40	0	0	0	0	0	1.4	0	20	20
Benz(a)anthracene	ND	0.40	0	0	0	0	0	0	0	20	20
Benzo(a)pyrene	ND	0.40	0	0	0	0	0	0.72	0	20	20
Benzo(b)fluoranthene	ND	0.40	0	0	0	0	0	0	0	20	20
Benzo(g,h,i)perylene	ND	0.40	0	0	0	0	0	0.8	0	20	20
Benzo(k)fluoranthene	ND	0.40	0	0	0	0	0	0	0	20	20
Chrysene	ND	0.40	0	0	0	0	0	0	0	20	20
Dibenz(a,h)anthracene	ND	0.40	0	0	0	0	0	0	0	20	20
Fluoranthene	ND	0.40	0	0	0	0	0	0	0	20	20
Fluorene	ND	0.40	0	0	0	0	0	0	0	20	20
Indeno(1,2,3-cd)pyrene	ND	0.40	0	0	0	0	0	0	0	20	20

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 Page 8 of 10

CLIENT: Pinnacle Laboratories

Work Order: 0211254

Project: 211203/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: 0211253-05A DUP		SampType: DUP		TestCode: 06 PAH A		Units: µg/L		Prep Date: 11/27/02		Run ID: HEISENBURG_021127B	
Client ID: ZZZZZ		Batch ID: 5154		TestNo: 8270-SIM		(3510C)		Analysis Date: 11/27/02		SeqNo: 149622	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	19.7	0.40	0	0	0	0	0	18.9	3.94	20	
Phenanthrene	ND	0.40	0	0	0	0	0	0	0	20	
Pyrene	ND	0.40	0	0	0	0	0	2.04	0	20	
Surr: 2-Fluorobiphenyl	3.04	0	4	0	76	43	116	0	0	0	
Surr: 4-Terphenyl-d14	3.36	0	4	0	84	33	141	0	0	0	
Surr: Nitrobenzene-d5	3.52	0	4	0	88	35	114	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: 06 PAH A	Units: µg/L	Prep Date:	Run ID: HEISENBURG_021127A						
Client ID: ZZZZZ	Batch ID: R12372	TestNo: 8270-SIM		Analysis Date: 11/27/02	SeqNo: 149592						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	1.05	0.10	1	0	105	80	120	0	0	0	
2-Methylnaphthalene	0.95	0.10	1	0	95	80	120	0	0	0	
Acenaphthene	1.16	0.10	1	0	116	80	120	0	0	0	
Acenaphthylene	1.06	0.10	1	0	106	80	120	0	0	0	
Anthracene	1.19	0.10	1	0	119	80	120	0	0	0	
Benz(a)anthracene	0.9	0.10	1	0	90	80	120	0	0	0	
Benzo(a)pyrene	1.07	0.10	1	0	107	80	120	0	0	0	
Benzo(b)fluoranthene	0.87	0.10	1	0	87	80	120	0	0	0	
Benzo(g,h,i)perylene	1.05	0.10	1	0	105	80	120	0	0	0	
Benzo(k)fluoranthene	1.08	0.10	1	0	108	80	120	0	0	0	
Chrysene	1.06	0.10	1	0	106	80	120	0	0	0	
Dibenz(a,h)anthracene	0.92	0.10	1	0	92	80	120	0	0	0	
Fluoranthene	1.14	0.10	1	0	114	80	120	0	0	0	
Fluorene	1.16	0.10	1	0	116	80	120	0	0	0	
Indeno(1,2,3-cd)pyrene	1.01	0.10	1	0	101	80	120	0	0	0	
Naphthalene	1.09	0.10	1	0	109	80	120	0	0	0	
Phenanthrene	1.14	0.10	1	0	114	80	120	0	0	0	
Pyrene	1.13	0.10	1	0	113	80	120	0	0	0	
Surr: 2-Fluorobiphenyl	0.94	0	1	0	94	43	116	0	0	0	
Surr: 4-Terphenyl-d14	1.17	0	1	0	117	33	141	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0211254
 Project: 211203/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: CCV	SampType: CCV	TestCode: 06 PAH A	Units: µg/L	Prep Date:	Run ID: HEISENBURG_021127A						
Client ID: ZZZZZ	Batch ID: R12372	TestNo: 8270-SIM		Analysis Date: 11/27/02	SeqNo: 149592						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Nitrobenzene-d5	1.03	0	1	0	103	35	114	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: 06 PAH A	Units: µg/L	Prep Date:	Run ID: HEISENBURG_021127B						
Client ID: ZZZZZ	Batch ID: R12374	TestNo: 8270-SIM		Analysis Date: 11/27/02	SeqNo: 149620						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1-Methylnaphthalene	0.92	0.10	1	0	92	80	120	0	0	0	
2-Methylnaphthalene	0.85	0.10	1	0	85	80	120	0	0	0	
Acenaphthene	1.17	0.10	1	0	117	80	120	0	0	0	
Acenaphthylene	1.08	0.10	1	0	108	80	120	0	0	0	
Anthracene	1.17	0.10	1	0	117	80	120	0	0	0	
Benz(a)anthracene	0.96	0.10	1	0	96	80	120	0	0	0	
Benzo(a)pyrene	1.09	0.10	1	0	109	80	120	0	0	0	
Benzo(b)fluoranthene	0.87	0.10	1	0	87	80	120	0	0	0	
Benzo(g,h,i)perylene	1.08	0.10	1	0	108	80	120	0	0	0	
Benzo(k)fluoranthene	1.1	0.10	1	0	110	80	120	0	0	0	
Chrysene	1.07	0.10	1	0	107	80	120	0	0	0	
Dibenz(a,h)anthracene	0.99	0.10	1	0	99	80	120	0	0	0	
Fluoranthene	1.16	0.10	1	0	116	80	120	0	0	0	
Fluorene	1.16	0.10	1	0	116	80	120	0	0	0	
Indeno(1,2,3-cd)pyrene	1.07	0.10	1	0	107	80	120	0	0	0	
Naphthalene	1.12	0.10	1	0	112	80	120	0	0	0	
Phenanthrene	1.16	0.10	1	0	116	80	120	0	0	0	
Pyrene	1.12	0.10	1	0	112	80	120	0	0	0	
Surr: 2-Fluorobiphenyl	0.95	0	1	0	95	43	116	0	0	0	
Surr: 4-Terphenyl-d14	1.11	0	1	0	111	33	141	0	0	0	
Surr: Nitrobenzene-d5	1.06	0	1	0	106	35	114	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

ENVIRONMENTAL SERVICES LABORATORY – GLOSSARY OF FLAGS

<u>QUALIFIER</u>	<u>DESCRIPTION</u>
AA	This sample was analyzed after the holding time had expired.
AB	The hydrocarbon pattern in this sample is not typical of gasoline.
AC	The hydrocarbon pattern in this sample is not typical of diesel.
AD	The hydrocarbon pattern in this sample is not typical of oil.
AE	The hydrocarbon pattern in this sample extends into the gasoline range.
AF	The hydrocarbon pattern in this sample extends into the diesel range.
AG	The hydrocarbon pattern in this sample extends into the oil range.
A	This analysis was performed on a VOA sample containing headspace.
B	Analyte detected in the Method Blank above the reporting level.
C	The Relative Percent Difference (RPD) for the primary result and confirmation result was greater than 40%. The higher result was reported.
D	The sample was supplied in an inappropriate container according to method criteria.
E	This value is above the quantitation limit. It is considered an estimate.
H	The Matrix Spike/Matrix Spike Duplicate (MS/MSD) result was outside control limits. The Laboratory Control Standard/Duplicate (LCS/LCSD) result was in control validating the batch.
J	The result is above the Method Detection Limit (MDL) and below the Reporting level (RL). It is considered an estimate.
M	The MS/MSD recoveries are not calculable due to a high amount of analyte in sample.
MI	This indicates a high level of matrix interference affecting the spike or surrogate recovery.
N	See case narrative.
O	Detection Limits are elevated due to sample dilution. See case narrative.
Q	Further inspection of the sample confirms a non-homogenous sample matrix affecting RPD result.
R	The RPD result is outside method control limits. See other qualifiers or case narrative.
S	The spike recovery is outside method control limits. See other qualifiers or case narrative.
T	The RPD between the sample result and duplicate result was greater than 20%. The original result was less than three times the reporting level, therefore the RPD is not applicable.
X	Unable to quantitate surrogate recovery due to sample dilution.

Pinnacle Laboratories, Inc.
 2709-D Pan American Freeway, NE
 Albuquerque, NM 87107
 (505) 344-3777 Fax (505) 344-4413

WATCH HOLD TIMES!!

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	TCLP RCRA (8) Metals	Metals-13 PP List	Metals-TAL (23 Metals)	TOX	TOC	Gen Chemistry:	Oil and Grease (Method 413.1)	Volatile Organics GC/MS (8260)	BOD	COD	Pesticides/PCB (608/8081/8082)	Herbicides (615/8151)	PNA (8310/8270 SIMS)	8260 (TCLP 1311) ZHE	Base/Neutral Acid Compounds GC/MS (625/8270)	Uranium (ICP-MS)	Radium 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
NW-18/211203-01	11/20/02	1428	AQ	01															X						
NW-19/211203-02	"	1549		02															X						
NW-05/211203-03	11/21/02	1003		03															X						
NW-04/211203-04	"	1114		04															X						
NW-06/211203-05	"	1333		05															X						
NW-10/211203-06	"	1424		06															X						
NW-9/211203-07	"	1601		07															X						
NW-08/211203-08	11/22/02	1001		08															X						
NW-22/211203-09	"	1044		09															X						
NW-21/211203-10	"	1120	✓	10															X						

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT #:	211203	Total Number of Containers		PENSACOLA - STL-FL		Signature:	Time:	Signature:	Time:
PROJ. NAME:	BIO	Chain of Custody Seals		ESL - OR		Printed Name:	Date:	Printed Name:	Date:
QC LEVEL:	STD. IV	Received Intact?		ATEL - AZ		Company		Company	
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		ATEL - MARION		RECEIVED BY:			
TAT:	STANDARD RUSHII	LAB NUMBER:		ATEL - MELMORE		RECEIVED BY:			
COMMENTS:									
DUE DATE:	12/11								
RUSH SURCHARGE:	---								
CLIENT DISCOUNT:									
SPECIAL CERTIFICATION									
REQUIRED: YES/NO	NO								

Network Project Manager: Jacinta Tenorio

ANALYSIS REQUEST

Pinnacle Laboratories, Inc.

2709-D Pan American Freeway, NE

Albuquerque, NM 87107

(505) 344-3777 Fax (505) 344-4413

SAMPLE ID DATE TIME MATRIX LAB ID

AS-Influent / 211203-11 11/22/02 1347 AQ 11
 AS-Effluent / 211203-12 1405 12
 MW-20 / 211203-15 1156 13
 MW-11 / 211203-16 11/21/02 1511 14

Metals (8) RCRA

TCLP RCRA (8) Metals

Metals-13 PP List

Metals-TAL (23 Metals)

TOX

TOC

Gen Chemistry:

Oil and Grease (Method 413.1)

Volatile Organics GC/MS (8260)

BOD

COD

Pesticides/PCB (608/8081/8082)

Herbicides (615/8151)

PNA (8310) (8270 SIMS)

8260 (TCLP 1311) ZHE

Base/Neutral Acid Compounds GC/MS (625/8270)

Uranium (ICP-MS)

Radium 226+228

Gross Alpha/Beta

TO-14

NUMBER OF CONTAINERS

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT #:	211203	Total Number of Containers		PENSACOLA - STL-FL		Signature:	Time:	Signature:	Time:
PROJ. NAME:	BIO	Chain of Custody Seals		ESL - OR		Printed Name:	Date:	Printed Name:	Date:
QC LEVEL:	(STD) IV	Received Intact?		ATEL - AZ		Printed Name:	Date:	Printed Name:	Date:
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		ATEL - MARION		Company		Company	
TAT:	STANDARD RUSH!!	LAB NUMBER:		ATEL - MELMORE		RECEIVED BY:		RECEIVED BY:	
DUE DATE: 12/11			COMMENTS:			Signature:		Signature:	
RUSH SURCHARGE: -						Time:		Time:	
CLIENT DISCOUNT: -						Printed Name:		Printed Name:	
SPECIAL CERTIFICATION REQUIRED: YES (NO)						Date:		Date:	

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-11530

Received: 26 NOV 02

Reported: 12 DEC 02

Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Project: BIO, REFINERY/211203

Sampled By: Client

Code: 084921212

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REPORT OF RESULTS

REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED				
11530-1	MW-18/211203-01	11-20-02/14:28				
11530-2	MW-19/211203-02	11-20-02/15:49				
11530-3	MW-05/211203-03	11-21-02/10:03				
11530-4	MW-04/211203-04	11-21-02/11:14				
11530-5	MW-06/211203-05	11-21-02/13:33				
PARAMETER	11530-1	11530-2	11530-3	11530-4	11530-5	
Alkalinity Series (2320B)						
Alkalinity (to pH 4.5) as CaCO ₃ , mg/l	1100	260	790	610	880	
PH, mg/l	7.8	7.4	7.9	7.5	7.7	
Dilution Factor	1	1	1	1	1	
Analysis Date	12.03.02	12.03.02	12.03.02	12.03.02	12.03.02	
Batch ID	AEW047	AEW047	AEW047	AEW047	AEW047	
Analyst	ST	ST	ST	ST	ST	
CO ₂ and Forms of Alkalinity (4500D)						
Bicarbonate (2320/4500), mg/l	1100	260	780	610	880	
Carbon Dioxide, mg/l	35	21	20	38	35	
Carbonate (2320/4500), mg/l	6.0	1.0	6.0	2.0	4.0	
Hydroxide, mg/l	<1.0	<1.0	<1.0	<1.0	<1.0	
Analysis Date	12.04.02	12.04.02	12.04.02	12.04.02	12.04.02	
Analyst	WG	WG	WG	WG	WG	
Chloride (4500E), mg/l						
Dilution Factor	MW-18 170 5	MW-19 90 1	MW-05 170 2	MW-04 110 2	MW-06 65 1	
Analysis Date	12.03.02	12.03.02	12.03.02	12.03.02	12.03.02	
Batch ID	CKW055A	CKW055A	CKW055A	CKW055A	CKW055A	
Analyst	CR	CR	CR	CR	CR	

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED				
11530-1	MW-18/211203-01	11-20-02/14:28				
11530-2	MW-19/211203-02	11-20-02/15:49				
11530-3	MW-05/211203-03	11-21-02/10:03				
11530-4	MW-04/211203-04	11-21-02/11:14				
11530-5	MW-06/211203-05	11-21-02/13:33				
PARAMETER	11530-1	11530-2	11530-3	11530-4	11530-5	
Specific Conductance (120.1), umhos/cm	4100	1600	5100	3500	4300	
Dilution Factor	1	1	1	1	1	
Analysis Date	12.02.02	12.02.02	12.02.02	12.02.02	12.02.02	
Batch ID	CDW025	CDW025	CDW025	CDW025	CDW025	
Analyst	ST	ST	ST	ST	ST	
Fluoride (340.2), mg/l	0.48	0.46	0.82	0.57	0.67	
Dilution Factor	1	1	1	1	1	
Analysis Date	12.07.02	12.07.02	12.07.02	12.07.02	12.07.02	
Batch ID	FLW047	FLW047	FLW047	FLW047	FLW047	
Analyst	ST	ST	ST	ST	ST	
Sulfate as SO4 (375.4), mg/l	820	450	1900	1100	1000	
Dilution Factor	50	25	50	50	50	
Analysis Date	12.11.02	12.11.02	12.11.02	12.11.02	12.11.02	
Batch ID	SEW090	SEW090	SEW090	SEW090	SEW090	
Analyst	BH	BH	BH	BH	BH	
Total Dissolved Solids (160.1), mg/l	2700	1100	3400	2400	3000	
Dilution Factor	1	1	1	1	1	
Analysis Date	11.27.02	11.27.02	11.27.02	11.27.02	11.27.02	
Batch ID	TDW070	TDW070	TDW070	TDW070	TDW070	
Analyst	ST	ST	ST	ST	ST	

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES					DATE/ TIME SAMPLED
11530-1	MW-18/211203-01					11-20-02/14:28
11530-2	MW-19/211203-02					11-20-02/15:49
11530-3	MW-05/211203-03					11-21-02/10:03
11530-4	MW-04/211203-04					11-21-02/11:14
11530-5	MW-06/211203-05					11-21-02/13:33
PARAMETER	11530-1	11530-2	11530-3	11530-4	11530-5	
Bromide (300.0), mg/l	1.5	0.74	1.4	0.90	0.95	
Dilution Factor	10	5	10	5	5	
Prep Date	12.04.02	12.04.02	12.04.02	12.04.02	12.04.02	
Analysis Date	12.04.02	12.04.02	12.04.02	12.04.02	12.04.02	
Batch ID	ICW007	ICW007	ICW007	ICW007	ICW007	
Prep Method	300.0	300.0	300.0	300.0	300.0	
Analyst	SB	SB	SB	SB	SB	
Hardness by calculation (6010B)						
Hardness as CaCO ₃ , mg/l	680	450	190	490	540	
Dilution Factor	1	1	1	1	1	
Prep Date	11.27.02	11.27.02	11.27.02	11.27.02	11.27.02	
Analysis Date	12.02.02	12.02.02	12.02.02	12.02.02	12.02.02	
Batch ID	PW477	PW477	PW477	PW477	PW477	
Prep Method	3010A	3010A	3010A	3010A	3010A	
Analyst	GSP	GSP	GSP	GSP	GSP	

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STL Pensacola

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-1	MW-18/211203-01	11-20-02/14:28			
11530-2	MW-19/211203-02	11-20-02/15:49			
11530-3	MW-05/211203-03	11-21-02/10:03			
11530-4	MW-04/211203-04	11-21-02/11:14			
11530-5	MW-06/211203-05	11-21-02/13:33			
PARAMETER	11530-1	11530-2	11530-3	11530-4	11530-5
RCRA Metals (6010B)					
Arsenic, mg/l	0.31	0.0090	<0.0050	0.024	<0.0050
Barium, mg/l	1.1	0.076	0.069	0.21	0.017
Cadmium, mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chromium, mg/l	0.059	<0.0050	0.0050	0.0080	<0.0050
Lead, mg/l	0.18	<0.0050	<0.0050	<0.0050	<0.0050
Selenium, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
Silver, mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dilution Factor	1	1	1	1	1
Prep Date	11.27.02	11.27.02	11.27.02	11.27.02	11.27.02
Analysis Date	12.02.02	12.02.02	12.02.02	12.02.02	12.02.02
Batch ID	PW477	PW477	PW477	PW477	PW477
Prep Method	3010A	3010A	3010A	3010A	3010A
Analyst	GSP	GSP	GSP	GSP	GSP
Mercury (7470A), mg/l	0.00025	<0.00020	<0.00020	<0.00020	<0.00020
Dilution Factor	1	1	1	1	1
Prep Date	12.10.02	12.10.02	12.10.02	12.10.02	12.10.02
Analysis Date	12.10.02	12.10.02	12.10.02	12.10.02	12.10.02
Batch ID	HGW114	HGW114	HGW114	HGW114	HGW114
Prep Method	7470A	7470A	7470A	7470A	7470A
Analyst	JDE	JDE	JDE	JDE	JDE

SEVERN

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-1	MW-18/211203-01	11-20-02/14:28			
11530-2	MW-19/211203-02	11-20-02/15:49			
11530-3	MW-05/211203-03	11-21-02/10:03			
11530-4	MW-04/211203-04	11-21-02/11:14			
11530-5	MW-06/211203-05	11-21-02/13:33			
PARAMETER	11530-1	11530-2	11530-3	11530-4	11530-5
Metals, Dissolved (6010B)					
Calcium, Dissolved, mg/l	97	110	50	160	190
Magnesium, Dissolved, mg/l	25	20	14	23	30
Potassium, Dissolved, mg/l	6.6	<5.0	5.7	5.8	6.9
Sodium, Dissolved, mg/l	860	220	1200	660	840
Dilution Factor	5	5	5	5	5
Prep Date	11.26.02	11.26.02	11.26.02	11.26.02	11.26.02
Analysis Date	12.02.02	12.02.02	12.02.02	12.02.02	12.02.02
Batch ID	PD123	PD123	PD123	PD123	PD123
Prep Method	N/A	N/A	N/A	N/A	N/A
Analyst	GSP	GSP	GSP	GSP	GSP

STL Pensacola

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-6	MW-10/211203-06	11-21-02/14:24			
11530-7	MW-9/211203-07	11-21-02/16:01			
11530-8	MW-08/211203-08	11-22-02/10:01			
11530-9	MW-22/211203-09	11-22-02/10:44			
11530-10	MW-21/211203-10	11-22-02/11:20			
PARAMETER	11530-6	11530-7	11530-8	11530-9	11530-10
Alkalinity Series (2320B)					
Alkalinity (to pH 4.5) as CaCO ₃ , mg/l	280	320	910	420	610
PH, mg/l	7.5	7.8	7.2	7.8	7.6
Dilution Factor	1	1	1	1	1
Analysis Date	12.03.02	12.03.02	12.03.02	12.03.02	12.03.02
Batch ID	AEW047	AEW047	AEW047	AEW047	AEW047
Analyst	ST	ST	ST	ST	ST
CO ₂ and Forms of Alkalinity (4500D)					
Bicarbonate (2320/4500), mg/l	280	320	910	420	610
Carbon Dioxide, mg/l	18	10	120	13	31
Carbonate (2320/4500), mg/l	1.0	2.0	1.0	2.0	2.0
Hydroxide, mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
Analysis Date	12.04.02	12.04.02	12.04.02	12.04.02	12.04.02
Analyst	WG	WG	WG	WG	WG
Chloride (4500E), mg/l	MW-10 100	MW-9 82	MW-08 160	MW-22 190	MW-21 190
Dilution Factor	1	1	2	2	2
Analysis Date	12.03.02	12.03.02	12.03.02	12.03.02	12.03.02
Batch ID	CKW055A	CKW055A	CKW055A	CKW055A	CKW055A
Analyst	CR	CR	CR	CR	CR

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-11530

Received: 26 NOV 02

Reported: 12 DEC 02

Ms. Jacinta Tenorio
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Albuquerque, NM 87107

Project: BIO, REFINERY/211203

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-6	MW-10/211203-06	11-21-02/14:24			
11530-7	MW-9/211203-07	11-21-02/16:01			
11530-8	MW-08/211203-08	11-22-02/10:01			
11530-9	MW-22/211203-09	11-22-02/10:44			
11530-10	MW-21/211203-10	11-22-02/11:20			
PARAMETER	11530-6	11530-7	11530-8	11530-9	11530-10
Specific Conductance (120.1), umhos/cm	7300	8300	5600	10000	12000
Dilution Factor	1	1	1	1	1
Analysis Date	12.02.02	12.02.02	12.02.02	12.02.02	12.02.02
Batch ID	CDW025	CDW025	CDW025	CDW025	CDW025
Analyst	ST	ST	ST	ST	ST
Fluoride (340.2), mg/l	0.86	1.1	0.57	0.51	0.59
Dilution Factor	1	1	1	1	1
Analysis Date	12.07.02	12.07.02	12.07.02	12.07.02	12.07.02
Batch ID	FLW047	FLW047	FLW047	FLW047	FLW047
Analyst	ST	ST	ST	ST	ST
Sulfate as SO4 (375.4), mg/l	4800	5900	2400	5100	5800
Dilution Factor	200	200	100	200	200
Analysis Date	12.11.02	12.11.02	12.11.02	12.11.02	12.11.02
Batch ID	SEW090	SEW090	SEW090	SEW090	SEW090
Analyst	BH	BH	BH	BH	BH
Total Dissolved Solids (160.1), mg/l	MW 5500	MW 6400	MW 4400	MW 7600	MW 9000
Dilution Factor	1	1	1	1	1
Analysis Date	11.27.02	11.27.02	11.27.02	11.27.02	11.27.02
Batch ID	TDW070	TDW070	TDW070	TDW070	TDW070
Analyst	ST	ST	ST	ST	ST

SEVERN

TRENT

SERVICES

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-6	MW-10/211203-06	11-21-02/14:24			
11530-7	MW-9/211203-07	11-21-02/16:01			
11530-8	MW-08/211203-08	11-22-02/10:01			
11530-9	MW-22/211203-09	11-22-02/10:44			
11530-10	MW-21/211203-10	11-22-02/11:20			
PARAMETER	11530-6	11530-7	11530-8	11530-9	11530-10
Bromide (300.0), mg/l	1.2	0.93	1.3	<1.3	1.6
Dilution Factor	5	5	10	10	10
Prep Date	12.04.02	12.04.02	12.04.02	12.04.02	12.04.02
Analysis Date	12.04.02	12.04.02	12.04.02	12.04.02	12.04.02
Batch ID	ICW007	ICW007	ICW007	ICW007	ICW007
Prep Method	300.0	300.0	300.0	300.0	300.0
Analyst	SB	SB	SB	SB	SB
Hardness by calculation (6010B)					
Hardness as CaCO ₃ , mg/l	1060	1200	1500	1300	1500
Dilution Factor	1	1	1	1	1
Prep Date	11.27.02	11.27.02	11.27.02	11.27.02	11.27.02
Analysis Date	12.02.02	12.02.02	12.02.02	12.02.02	12.02.02
Batch ID	PW477	PW477	PW477	PW477	PW477
Prep Method	3010A	3010A	3010A	3010A	3010A
Analyst	GSP	GSP	GSP	GSP	GSP

STL Pensacola

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-6	MW-10/211203-06	11-21-02/14:24			
11530-7	MW-9/211203-07	11-21-02/16:01			
11530-8	MW-08/211203-08	11-22-02/10:01			
11530-9	MW-22/211203-09	11-22-02/10:44			
11530-10	MW-21/211203-10	11-22-02/11:20			
PARAMETER	11530-6	11530-7	11530-8	11530-9	11530-10
RCRA Metals (6010B)					
Arsenic, mg/l	<0.0050	<0.0050	0.044	0.0050	0.057
Barium, mg/l	0.091	0.11	1.5	0.030	0.023
Cadmium, mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chromium, mg/l	<0.0050	0.010	0.042	<0.0050	<0.0050
Lead, mg/l	<0.0050	<0.0050	0.045	0.28	<0.0050
Selenium, mg/l	<0.010	<0.010	<0.010	<0.010	<0.010
Silver, mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dilution Factor	1	1	1	1	1
Prep Date	11.27.02	11.27.02	11.27.02	11.27.02	11.27.02
Analysis Date	12.02.02	12.02.02	12.02.02	12.02.02	12.02.02
Batch ID	PW477	PW477	PW477	PW477	PW477
Prep Method	3010A	3010A	3010A	3010A	3010A
Analyst	GSP	GSP	GSP	GSP	GSP
Mercury (7470A), mg/l	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Dilution Factor	1	1	1	1	1
Prep Date	12.10.02	12.10.02	12.10.02	12.10.02	12.10.02
Analysis Date	12.10.02	12.10.02	12.10.02	12.10.02	12.10.02
Batch ID	HGW114	HGW114	HGW114	HGW114	HGW114
Prep Method	7470A	7470A	7470A	7470A	7470A
Analyst	JDE	JDE	JDE	JDE	JDE

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-11530

Received: 26 NOV 02

Reported: 12 DEC 02

Ms. Jacinta Tenorio
 Pinnacle Laboratories
 2709-D Pan American Freeway Northeast
 Albuquerque, NM 87107

Project: BIO, REFINERY/211203

Sampled By: Client

Code: 084921212

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-6	MW-10/211203-06	11-21-02/14:24			
11530-7	MW-9/211203-07	11-21-02/16:01			
11530-8	MW-08/211203-08	11-22-02/10:01			
11530-9	MW-22/211203-09	11-22-02/10:44			
11530-10	MW-21/211203-10	11-22-02/11:20			
PARAMETER	11530-6	11530-7	11530-8	11530-9	11530-10
Metals, Dissolved (6010B)					
Calcium, Dissolved, mg/l	380	430	470	420	510
Magnesium, Dissolved, mg/l	50	70	65	72	92
Potassium, Dissolved, mg/l	7.1	6.0	8.1	12	11
Sodium, Dissolved, mg/l	1300	1600	870	2000	2400
Dilution Factor	5	5	5	5	5
Prep Date	11.26.02	11.26.02	11.26.02	11.26.02	11.26.02
Analysis Date	12.02.02	12.02.02	12.02.02	12.02.02	12.02.02
Batch ID	PD123	PD123	PD123	PD123	PD123
Prep Method	N/A	N/A	N/A	N/A	N/A
Analyst	GSP	GSP	GSP	GSP	GSP

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Project: BIO, REFINERY/211203

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-11	AS-INFLUENT/211203-11	11-22-02/13:47			
11530-12	AS-EFFLUENT/211203-12	11-22-02/14:05			
11530-13	MW-20/211203-15	11-22-02/11:56			
11530-14	MW-11/211203-16	11-21-02/15:11			
PARAMETER	11530-11	11530-12	11530-13	11530-14	
Alkalinity Series (2320B)					
Alkalinity (to pH 4.5) as CaCO ₃ , mg/l	930	590	420	480	
PH, mg/l	7.6	7.6	7.3	7.5	
Dilution Factor	1	1	1	1	
Analysis Date	12.03.02	12.03.02	12.03.02	12.03.02	
Batch ID	AEW047	AEW047	AEW047	AEW047	
Analyst	ST	ST	ST	ST	
CO ₂ and Forms of Alkalinity (4500D)					
Bicarbonate (2320/4500), mg/l	930	590	420	480	
Carbon Dioxide, mg/l	47	30	42	30	
Carbonate (2320/4500), mg/l	3.0	2.0	1.0	1.0	
Hydroxide, mg/l	<1.0	<1.0	<1.0	<1.0	
Analysis Date	12.04.02	12.04.02	12.04.02	12.04.02	
Analyst	WG	WG	WG	WG	
Chloride (4500E), mg/l	1300	1300	76	81	
Dilution Factor	20	20	1	1	
Analysis Date	12.03.02	12.03.02	12.03.02	12.03.02	
Batch ID	CKW055A	CKW055A	CKW055A	CKW055A	
Analyst	CR	CR	CR	CR	

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-11530
 Received: 26 NOV 02
 Reported: 12 DEC 02

Ms. Jacinta Tenorio
 Pinnacle Laboratories
 2709-D Pan American Freeway Northeast
 Albuquerque, NM 87107

Project: BIO, REFINERY/211203
 Sampled By: Client
 Code: 155321212
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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-11	AS-INFLUENT/211203-11	11-22-02/13:47			
11530-12	AS-EFFLUENT/211203-12	11-22-02/14:05			
11530-13	MW-20/211203-15	11-22-02/11:56			
11530-14	MW-11/211203-16	11-21-02/15:11			
PARAMETER	11530-11	11530-12	11530-13	11530-14	
Specific Conductance (120.1), umhos/cm	8300	7800	2900	6100	
Dilution Factor	1	1	1	1	
Analysis Date	12.02.02	12.02.02	12.02.02	12.02.02	
Batch ID	CDW025	CDW025	CDW025	CDW025	
Analyst	ST	ST	ST	ST	
Fluoride (340.2), mg/l	0.61	0.42	0.41	0.68	
Dilution Factor	1	1	1	1	
Analysis Date	12.07.02	12.07.02	12.07.02	12.07.02	
Batch ID	FLW047	FLW047	FLW047	FLW047	
Analyst	ST	ST	ST	ST	
Sulfate as SO4 (375.4), mg/l	2300	1600	910	1400	
Dilution Factor	100	100	100	100	
Analysis Date	12.11.02	12.11.02	12.11.02	12.11.02	
Batch ID	SEW090	SEW090	SEW090	SEW090	
Analyst	BH	BH	BH	BH	
Total Dissolved Solids (160.1), mg/l	5200	4900	2100	4700	
Dilution Factor	1	1	1	1	
Analysis Date	11.27.02	11.27.02	11.27.02	11.27.02	
Batch ID	TDW070	TDW070	TDW070	TDW070	
Analyst	ST	ST	ST	ST	

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TRENT

SERVICES

STL Pensacola

LOG NO: C2-11530

Received: 26 NOV 02

Reported: 12 DEC 02

Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Project: BIO, REFINERY/211203

Sampled By: Client

Code: 084921212

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-11	AS-INFLUENT/211203-11	11-22-02/13:47			
11530-12	AS-EFFLUENT/211203-12	11-22-02/14:05			
11530-13	MW-20/211203-15	11-22-02/11:56			
11530-14	MW-11/211203-16	11-21-02/15:11			
PARAMETER	11530-11	11530-12	11530-13	11530-14	
Bromide (300.0), mg/l	12I	14	0.70	0.99	
Dilution Factor	100	100	5	5	
Prep Date	12.04.02	12.04.02	12.04.02	12.04.02	
Analysis Date	12.04.02	12.04.02	12.04.02	12.04.02	
Batch ID	ICW007	ICW007	ICW007	ICW007	
Prep Method	300.0	300.0	300.0	300.0	
Analyst	SB	SB	SB	SB	
Hardness by calculation (6010B)					
Hardness as CaCO ₃ , mg/l	1300	1200	860	1300	
Dilution Factor	1	1	1	1	
Prep Date	11.27.02	11.27.02	11.27.02	11.27.02	
Analysis Date	12.02.02	12.02.02	12.02.02	12.02.02	
Batch ID	PW477	PW477	PW477	PW477	
Prep Method	3010A	3010A	3010A	3010A	
Analyst	GSP	GSP	GSP	GSP	

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SERVICES

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Albuquerque, NM 87107

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-11	AS-INFLUENT/211203-11	11-22-02/13:47			
11530-12	AS-EFFLUENT/211203-12	11-22-02/14:05			
11530-13	MW-20/211203-15	11-22-02/11:56			
11530-14	MW-11/211203-16	11-21-02/15:11			
PARAMETER	11530-11	11530-12	11530-13	11530-14	
RCRA Metals (6010B)					
Arsenic, mg/l	<0.0050	<0.0050	0.017	0.097	
Barium, mg/l	0.063	0.054	0.13	2.1	
Cadmium, mg/l	<0.0050	<0.0050	<0.0050	<0.0050	
Chromium, mg/l	<0.0050	<0.0050	0.0080	0.086	
Lead, mg/l	0.13	0.090	0.0070	0.062	
Selenium, mg/l	<0.010	<0.010	<0.010	<0.010	
Silver, mg/l	<0.0050	<0.0050	<0.0050	<0.0050	
Dilution Factor	1	1	1	1	
Prep Date	11.27.02	11.27.02	11.27.02	11.27.02	
Analysis Date	12.02.02	12.02.02	12.02.02	12.02.02	
Batch ID	PW477	PW477	PW477	PW477	
Prep Method	3010A	3010A	3010A	3010A	
Analyst	GSP	GSP	GSP	GSP	
Mercury (7470A), mg/l	<0.00020	<0.00020	<0.00020	<0.00020	
Dilution Factor	1	1	1	1	
Prep Date	12.10.02	12.10.02	12.10.02	12.10.02	
Analysis Date	12.10.02	12.10.02	12.10.02	12.10.02	
Batch ID	HGW114	HGW114	HGW114	HGW114	
Prep Method	7470A	7470A	7470A	7470A	
Analyst	JDE	JDE	JDE	JDE	

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SERVICES

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-11	AS-INFLUENT/211203-11	11-22-02/13:47			
11530-12	AS-EFFLUENT/211203-12	11-22-02/14:05			
11530-13	MW-20/211203-15	11-22-02/11:56			
11530-14	MW-11/211203-16	11-21-02/15:11			
PARAMETER	11530-11	11530-12	11530-13	11530-14	
Metals, Dissolved (6010B)					
Calcium, Dissolved, mg/l	430	340	230	370	
Magnesium, Dissolved, mg/l	68	68	32	29	
Potassium, Dissolved, mg/l	12	12	<5.0	8.3	
Sodium, Dissolved, mg/l	1400	1400	420	1100	
Dilution Factor	5	5	5	5	
Prep Date	11.26.02	11.26.02	11.26.02	11.26.02	
Analysis Date	12.02.02	12.02.02	12.02.02	12.02.02	
Batch ID	PD123	PD123	PD123	PD123	
Prep Method	N/A	N/A	N/A	N/A	
Analyst	GSP	GSP	GSP	GSP	

STL Pensacola

LOG NO: C2-11530

Received: 26 NOV 02

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Albuquerque, NM 87107

Project: BIO, REFINERY/211203

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REPORT OF RESULTS

DATE/

TIME SAMPLED

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES				
11530-15	Method Blank				
11530-16	Lab Control Standard % Recovery				
11530-17	Matrix Spike % Recovery				
11530-18	Matrix Spike Duplicate % Recovery				
PARAMETER	11530-15	11530-16	11530-17	11530-18	
Alkalinity Series (2320B)					
Alkalinity (to pH 4.5) as CaCO ₃ , mg/l	<1.0	102 %	104 %	112 %	
Dilution Factor	1	---	---	---	
Analysis Date	12.03.02	---	---	---	
Batch ID	AEW047	AEW047	AEW047	AEW047	
Analyst	ST	---	---	---	
CO ₂ and Forms of Alkalinity (4500D)					
Bicarbonate (2320/4500), mg/l	N/A	N/A	N/A	N/A	
Chloride (4500E), mg/l					
Chloride (4500E), mg/l	<2.0	101 %	111 %	100 %	
Dilution Factor	1	---	---	---	
Analysis Date	12.03.02	---	---	---	
Batch ID	CKW055A	CKW055A	CDW055A	CDW055A	
Analyst	CR	---	---	---	
Specific Conductance (120.1), umhos/cm					
Specific Conductance (120.1), umhos/cm	<1.0	100 %	N/A	N/A	
Dilution Factor	1	---	---	---	
Analysis Date	12.02.02	---	---	---	
Batch ID	CDW025	CDW025	---	---	
Analyst	ST	---	---	---	

SEVERN

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SERVICES

STL Pensacola

LOG NO: C2-11530

Received: 26 NOV 02

Reported: 12 DEC 02

Ms. Jacinta Tenorio
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2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Project: BIO, REFINERY/211203

Sampled By: Client

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED		
11530-15	Method Blank			
11530-16	Lab Control Standard % Recovery			
11530-17	Matrix Spike % Recovery			
11530-18	Matrix Spike Duplicate % Recovery			
PARAMETER	11530-15	11530-16	11530-17	11530-18
Fluoride (340.2), mg/l	<0.20	107 %	110 %	113 %
Dilution Factor	1	---	---	---
Analysis Date	12.07.02	---	---	---
Batch ID	FLW047	FLW047	FLW047	FLW047
Analyst	ST	---	---	---
Sulfate as SO4 (375.4), mg/l	<5.0	90 %	104 %	109 %
Dilution Factor	1	---	---	---
Analysis Date	12.11.02	---	---	---
Batch ID	SEW090	SEW090	SEW090	SEW090
Analyst	BH	---	---	---
Total Dissolved Solids (160.1), mg/l	<5.0	103 %	N/A	N/A
Dilution Factor	1	---	---	---
Analysis Date	11.27.02	---	---	---
Batch ID	TDW070	TDW070	---	---
Analyst	ST	---	---	---
Bromide (300.0), mg/l	<0.13	105 %	NoMS	NoMS
Dilution Factor	1	---	---	---
Prep Date	12.04.02	---	---	---
Analysis Date	12.04.02	---	---	---
Batch ID	ICW007	ICW007	---	---
Prep Method	300.0	---	---	---
Analyst	SB	---	---	---

STL Pensacola

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
11530-15	Method Blank				
11530-16	Lab Control Standard % Recovery				
11530-17	Matrix Spike % Recovery				
11530-18	Matrix Spike Duplicate % Recovery				
PARAMETER	11530-15	11530-16	11530-17	11530-18	
Hardness by calculation (6010B)					
Hardness as CaCO ₃ , mg/l	<3.3	---	---	---	
Dilution Factor	1	---	---	---	
Prep Date	11.27.02	---	---	---	
Analysis Date	12.02.02	---	---	---	
Batch ID	PW477	PW477	PW477	PW477	
Prep Method	3010A	---	---	---	
Analyst	GSP	---	---	---	
RCRA Metals (6010B)					
Arsenic, mg/l	<0.0050	105 %	105 %	106 %	
Barium, mg/l	<0.010	108 %	108 %	108 %	
Cadmium, mg/l	<0.0050	107 %	105 %	106 %	
Chromium, mg/l	<0.0050	107 %	106 %	107 %	
Lead, mg/l	<0.0050	107 %	106 %	107 %	
Selenium, mg/l	<0.010	102 %	101 %	102 %	
Silver, mg/l	<0.0050	106 %	107 %	107 %	
Dilution Factor	1	---	---	---	
Prep Date	11.27.02	---	---	---	
Analysis Date	12.02.02	---	---	---	
Batch ID	PW477	PW477	PW477	PW477	
Prep Method	3010A	---	---	---	
Analyst	GSP	---	---	---	

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REPORT OF RESULTS

DATE/

TIME SAMPLED

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES			
11530-15	Method Blank			
11530-16	Lab Control Standard % Recovery			
11530-17	Matrix Spike % Recovery			
11530-18	Matrix Spike Duplicate % Recovery			
PARAMETER	11530-15	11530-16	11530-17	11530-18
Mercury (7470A), mg/l	<0.00020	99 %	99 %	99 %
Dilution Factor	1	---	---	---
Prep Date	12.10.02	---	---	---
Analysis Date	12.10.02	---	---	---
Batch ID	HGW114	HGW114	HGW114	HGW114
Prep Method	7470A	7470A	7470A	7470A
Analyst	JDE	---	---	---
Metals, Dissolved (6010B)				
Calcium, Dissolved, mg/l	<0.50	104 %	100 %	101 %
Magnesium, Dissolved, mg/l	<0.50	105 %	101 %	102 %
Potassium, Dissolved, mg/l	<1.0	103 %	118 %	119 %
Sodium, Dissolved, mg/l	<1.0	100 %	N/C	N/C
Dilution Factor	1	1	1	1
Prep Date	11.26.02	11.26.02	11.26.02	11.26.02
Analysis Date	11.27.02	11.27.02	11.27.02	11.27.02
Batch ID	PD123	PD123	PD123	PD123
Prep Method	N/A	N/A	N/A	N/A
Analyst	GSP	---	---	---

STL Pensacola

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Project: BIO, REFINERY/211203

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
11530-15	Method Blank	
11530-16	Lab Control Standard % Recovery	
11530-17	Matrix Spike % Recovery	
11530-18	Matrix Spike Duplicate % Recovery	

PARAMETER	11530-15	11530-16	11530-17	11530-18
-----------	----------	----------	----------	----------

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

Data from any samples that do not meet client, federal, or state sample acceptance criteria (collection, preservation, or holding time) will be flagged, or noted on a corrective action form or case narrative, or addressed on the Project Sample Inspection Form (PSIF).

A statement of the estimated uncertainty of the test result is available upon request.


Lance Larson, Project Manager

Final Page Of Report

STL Pensacola PROJECT SAMPLE INSPECTION FORM

STL
TRENT

Lab Order #: C211530

Date Received: 11-26-02

- | | |
|--|---|
| <p>1. Was there a Chain of Custody? ☒ Yes ☐ No*</p> <p>2. Was Chain of Custody properly filled out and relinquished? ☒ Yes ☐ No*</p> <p>3. Were all samples properly labeled and identified? ☒ Yes ☐ No*</p> <p>4. Were samples received cold? ☒ Yes ☐ No* N/A
(Criteria: 2° - 6°C: STL-SOP 1055)</p> <p>5. Did samples require splitting or compositing*? Yes* ☒ No</p> <p>6. Were samples received in proper containers for analysis requested? ☒ Yes ☐ No*</p> <p>7. Were all sample containers received intact? ☒ Yes ☐ No*</p> | <p>8. Were samples checked for preservative? ☒ Yes ☐ No* N/A
(Check pH of all H₂O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)*</p> <p>9. Is there sufficient volume for analysis requested? ☒ Yes ☐ No* N/A (Can)</p> <p>10. Were samples received within Holding Time? ☒ Yes ☐ No* (REFER TO STL-SOP 1040)</p> <p>11. Is Headspace visible > 1/4" in diameter in VOA vials?* Yes* ☐ No ☒ N/A</p> <p>12. Were Trip Blanks Received? Yes ☐ No ☒ N/A</p> <p>13. If sent, were matrix spike bottles returned? Yes ☐ No* ☒ N/A</p> <p>14. If sent, were T-Handles returned? Yes ☐ No* ☒ N/A</p> <p>15. If any issues, how was PM notified? PSIF ☐ Verbal ☐</p> |
|--|---|

Airbill Number(s): 17878116801437016609

Shipped By: UPS FedX HD BUS ABX

Cooler Numbers & Temp(s) (°C): 1787811680143881812
(CCK8) 2° 2°

(HD - Hand Delivery)
client 55[#], client 54[#]

(IE. 340L-4°C-CCK8 -- LIST THERMOMETER NUMBER FOR VERIFICATION)

Out of Control Events and Inspection Comments (list sample IDs/Tests where appropriate):

1-3. COC/Sample ID/COC discrepancy: _____

4. Insufficient Ice ☐ Delay in delivery ☐ Other ☐ _____

5. Samples were Split ☐ Composited ☐ Requested by: Client ☐ PM ☐ Other: _____

6. Improper Containers (ID/Size/desc): _____

7. Broken bottles/Test: _____

8. Incorrect pH: _____

9. Test/Matrix/Volume: _____

10. Out of Holding Time/Test: _____

11. VOA headspace > 1/4" (list ~ size) _____

List additional comments by above number: _____

(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: DMH Date: 11/26/02 Logged By: mts Date: 11/26/02

* Note all Out-of-Control and/or questionable events on Comment Section of this form. For holding times, the analytical department will flag immediate hold time samples (pH, Dissolved O₂, Residual Cl) as out of hold time, therefore, these samples will not be documented on this PSIF.
All volatile samples requested to be split or composited must be done in the Volatile Lab. Document: "Volatile sample values may be compromised due to sample splitting (compositing)".
All pH results for North Carolina, New York, and other requested samples are to be recorded on the pH log provided (STL-SOP 938).
According to EPA, 1/4" of headspace is acceptable in 40 ml vials requiring volatile analysis.

STL Pensacola Data Qualifiers for Final Report

B	The analyte was detected in the associated method blank and in the client's sample.
C	The compound has been quantitated against a one point calibration.
D	Recovery is not calculable due to dilution.
E	Estimated value because the analyte concentration exceeds the upper calibration range of the instrument or method.
I	Estimated value because the analyte concentration is less than the lower calibration range of the instrument but is at the method detection limit or greater than the method detection limit.
H	Sample and/or duplicate is below 5 X (times) the STL Reporting Limit and the absolute difference between the results exceeds the STL Reporting Limit.
J1	A sample surrogate or an LCS target compound recovered above the upper control limit (UCL). Compounds qualified with a J1 may be biased high.
J2	A sample surrogate or an LCS target compound recovered outside the lower control limit (LCL). Compounds qualified with a J2 may be biased low.
M1	A matrix effect was present.
M2	The MS and/or MSD %R or RPD was outside upper or lower control limits; not necessarily due to matrix effect.
N/C	Not Calculable; Sample spiked is > 4X spike concentration (may use this flag in place of negative numbers).
R1	Internal standard area exceeds the acceptance criteria
R2	Calibration verification exceeds the acceptance criteria.
S1	The Method of Standard Additions (MSA) has been performed on this sample.
T	Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.
TIC	The compound is not included in the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified Compound.
U or <	The analyte was not detected at or above the MDL or the RL, whichever is entered next to the "U" or "<"
W	Post-digestion spike for Furnace AA is out of control limits (85-115%), while sample absorbance is less than 50% spike absorbance.

It is permissible to submit an Out-of-Control Events/Corrective Action form and/or Case Narrative in lieu of using above qualifiers.

When the laboratory receives a sample that does not meet EPA requirements for sample collection, preservation or holding time, the laboratory is required to reject the samples. The client must be notified and asked whether the lab should proceed with analysis. Data from any samples that do not meet sample acceptance criteria (collection, preservation and holding time), must be flagged, or noted on a corrective action form or case narrative, or addressed on the Project Sample Inspection Form (PSIF) in an unambiguous manner clearly defining the nature and substance of the variation. NPDES samples from North Carolina that do not meet EPA requirements for sample collection, preservation or holding time are non-reportable for NPDES compliance monitoring.

Abbreviations

ND	Not Detected at or above the STL Pensacola reporting limit (RL)
NS	Not Submitted
NA	Not Applicable
MDL	STL Pensacola Method Detection Limit
RL	STL Pensacola Reporting Limit
NoMS	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD)

Florida Projects Inorganic/Organic

Refer to FL DEP 62-160.700(7); Table 7 Data Qualifier Codes. FL DEP Rule 62-160.670(1)(h) states that laboratories shall include the analytical result for each analysis with applicable data qualifiers. FL DEP Rule 62-160.700(7), Table 7 lists the FL DEP data qualifiers. FL DEP Rule 62-160.700(3), Table 3 lists the Florida sites which require data qualifiers.

AFCEE QAPP Projects

Refer to AFCEE QAPP for appropriate data qualifiers (AFCEE QAPP Version will be specified by client for the project).

Arizona DEQ Projects

Any qualified data submitted to Arizona DEQ (ADEQ) after January 1, 2001 must be designated using the Arizona Data Qualifiers as developed by the Arizona ELAC technical subcommittee. Refer to the ADEQ qualifier list.

CLP and CLP-like Projects

Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers. CLP SOW to be followed must be specified to client.

STL PENSACOLA
Certifications, Memberships & Affiliations

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL), expires 06/30/03

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater), expires 01/11/03

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental), expires 02/20/03

California Department of Health Services, **ELAP** Laboratory ID No. I-2510 (Hazardous Waste and Wastewater), expires 03/31/03

Connecticut Department of Health Services, Connecticut Lab Approval No. PH-0697 (D W, H W and Wastewater), expires 09/30/03

Florida DOH, **NELAP** Laboratory ID No. E81010 (Drinking Water, Hazardous Waste and Wastewater), expires 06/30/03

Florida DEP/DOH CompQAP # 980156

Iowa Department of Natural Resources, Laboratory ID No. 367 (UST), expires 08/01/04

Kansas Department of Health & Environment, **NELAP** Laboratory ID No. E10253 (Wastewater and Hazardous Waste), expires 10/31/03

Kentucky NR&EPC, Laboratory ID No. 90043 (Drinking Water), expires 12/31/02.

Louisiana DEQ, LELAP, **NELAP** Laboratory ID No. 02075, Agency Interest ID 30748 (Environmental, expires 6/30/03)

Maryland DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida), expires 09/30/03

Massachusetts DEP, Laboratory ID No. M-FL094 (Wastewater), expires 06/30/03

Michigan Bureau of E&OcH, Laboratory ID No.9912 (Drinking Water by Reciprocity with Florida), expires 06/30/03

New Hampshire DES ELAP, **NELAP** Laboratory ID No. 250502 (Drinking Water & Wastewater), expires 08/16/03

New Jersey DEP&E, **NELAP** Laboratory ID No. FL006 (Wastewater and Hazardous Waster), expires 06/30/03.

New York State Department of Health, **NELAP** Laboratory ID No. 11503 (WW and Solids/Hazardous Waste), expires 04/01/2003

North Carolina DENR, Laboratory ID No. 314 (Hazardous Waste and Wastewater), expires 12/31/02.

North Dakota DH&Consol Labs, Laboratory ID No. R-108 Wastewater and Hazardous Waste by Reciprocity with Florida), expires 06/30/03

Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater), expires 08/31/03

Pennsylvania Department of Environmental Resources, **NELAP** Laboratory ID No. 68-467 (Drinking Water & Wastewater), expires 12/01/02

South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater & Solids/Hazardous Waste by Reciprocity with FL), expires 06/30/03

Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water), expires 08/03/04

Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL), expires 06/30/03.

Washington Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater), expires 09/14/03.

West Virginia DOE, Office of Water Resources, Laboratory ID No. 136 (Haz Waste and Wastewater), expires 04/30/02.

AIHA (American Industrial Hygiene Association) Accredited Laboratory, Laboratory ID No. 100704, expires April 1, 2004. Participant in AIHA sponsored Laboratory PAT Rounds

EPA ICR (Information Collection Rule) Approved Laboratory, Laboratory ID No. ICRFL031

NFESC (Naval Facilities Engineering Services Center), expires December 31, 2002.

USACE (United States Army Corps. of Engineers), MRD, expires January 5, 2003.

STL Pensacola also has a foreign soil permit to accept soils from locations other than the continental United States. Permit No. S-37599

Network Project Manager: Jacinta Tenorio

ANALYSIS REQUEST

Pinnacle Laboratories, Inc.

2709-D Pan American Freeway, NE

Albuquerque, NM 87107

(505) 344-3777 Fax (505) 344-4413

C211533

Dress Metals have been filtered & preserved.
WATCH HOW TIMES!!

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA (Total)	TCLP RCRA (8) Metals	Metals-13 PP List	Metals-TAL (23 Metals)	DSS: Ca, Mg, K, Na	TOX	Total Hardness	Gen Chemistry: Fe, Pb, Cu, Ni, SO_4, F	Br, Alk + Bicarb / Carb / OH	Oil and Grease (Method 413.1)	Volatile Organics GC/MS (8260)	BOD	COD	Pesticides/PCB (608/8081/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	8260 (TCLP 1311) ZHE	Base/Neutral Acid Compounds GC/MS (625/8270)	Uranium (ICP-MS)	Radium 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
NW-18/21/203-01	11/20/02	1428	AQ		X				X		X	X	X	X													
NW-19/21/203-02	↓	1549			X				X		X	X	X	X													
NW-05/21/203-03	11/21/02	1003			X				X		X	X	X	X													
NW-04/21/203-04	↓	1114			X				X		X	X	X	X													
NW-06/21/203-05	↓	1333			X				X		X	X	X	X													
NW-10/21/203-06	↓	1424			X				X		X	X	X	X													
NW-9/21/203-07	↓	1601			X				X		X	X	X	X													
NW-08/21/203-08	11/22/02	1001			X				X		X	X	X	X													
NW-22/21/203-09	↓	1044			X				X		X	X	X	X													
NW-21/21/203-10	↓	1120	↓		X				X		X	X	X	X													

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT #:	211203	Total Number of Containers		PENSACOLA - STL-FL	X	Signature:	Almona J. J. 1700	Signature:	
PROJ. NAME:	BIO	Chain of Custody Seals		ESL - OR		Printed Name:	Almona J. J.	Printed Name:	
QC LEVEL:	STD. IV	Received Intact?		ATEL - AZ		Date:	11/25/02	Date:	
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		ATEL - MARION		Company	Pinnacle Laboratories, Inc.	Company	
TAT:	STANDARD RUSH!!	LAB NUMBER:		ATEL - MELMORE		RECEIVED BY:		RECEIVED BY:	
DUE DATE: 12/11			COMMENTS:	GEL		Signature:	David Howard	Signature:	
RUSH SURCHARGE:				U OF MIAMI		Printed Name:	David Howard	Printed Name:	
CLIENT DISCOUNT:				WCAS		Date:	11/26/02	Date:	
SPECIAL CERTIFICATION				WOHL		Company	STL-PUS	Company	
REQUIRED: YES NO									

Network Project Manager: Jacinta Tenorio

Pinnacle Laboratories, Inc.
2709-D Pan American Freeway, NE
Albuquerque, NM 87107
(505) 344-3777 Fax (505) 344-4413

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA (Total)	TCLP RCRA (8) Metals	Metals-13 PP List	Metals-TAL (23 Metals)	Diss. Ca, Mg, K, Na	TOX	Gen Chemistry: EC, TDS, Cl, SO4, F	Br, Alk + Bicar, Carb, OH	Oil and Grease (Method 413.1)	Volatile Organics GC/MS (8260)	BOD	COD	Pesticides/PCB (608/8081/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	8260 (TCLP 1311) ZHE	Base/Neutral Acid Compounds GC/MS (625/8270)	Uranium (ICP-MS)	Radium 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
AS-Influent/211203-11	11/22/02	1347	AQ		X				X		X	X	X													
AS-Effluent/211203-12	11/22/02	1405			X				X		X	X	X													
MW-20/211203-15	11/22/02	1156			X				X		X	X	X													
MW-11/211203-16	11/21/02	1511	↓		X				X		X	X	X													

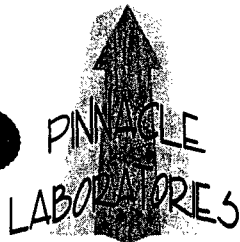
C211530

PROJECT INFORMATION		SAMPLE RECEIPT		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT #:	211203	Total Number of Containers		Signature:	Time:	Signature:	Time:
PROJ. NAME:	BIO	Chain of Custody Seals		Printed Name:	Date:	Printed Name:	Date:
QC LEVEL:	STD IV	Received Intact?		Signature:	Date:	Signature:	Date:
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		Company:		Company:	
TAT:	STANDARD RUSH!!	LAB NUMBER:		RECEIVED BY:		RECEIVED BY:	
DUE DATE: 12/11		COMMENTS:		Signature:		Signature:	
RUSH SURCHARGE:				Printed Name:		Printed Name:	
CLIENT DISCOUNT:				Signature:		Signature:	
SPECIAL CERTIFICATION				Printed Name:		Printed Name:	
REQUIRED: YES (NO)				Company:		Company:	

PAGE 2 OF 2

PARAMETERS	
BTEX/m3	
PAH	
Metals	
TDS	
CATION ANION	
pH	

Rec'd 38 bottles @ 3.3%, 5.7%, 4.1% DISTRIBUTION
1/5/98 AEN Inc.: American Environmental Network (NM), Inc. 3.3%



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
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Pinnacle Lab ID number **212018**
December 23, 2002

BIOTECH REMEDIATION
501 AIRPORT DRIVE SUITE 104
FARMINGTON, NM 87401

Project Name THRIFTWAY REFINERY
Project Number 810

Attention: TERRY GRIFFIN

On 12/04/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8021 and pH analyses were performed by Pinnacle Laboratories, Inc. Albuquerque, NM.

EPA method 8270 SIMS analyses were performed by Environmental Services Laboratory, Inc. Portland, OR.

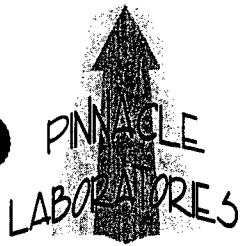
All remaining analyses were performed by Severn Trent Laboratories, Inc. Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

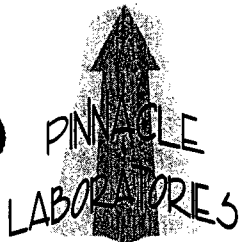


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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT : BIOTECH REMEDIATION
PROJECT # : 810
PROJECT NAME : THRIFTWAY REFINERY

PINNACLE ID : 212018
DATE RECEIVED : 12/04/02
REPORT DATE : 12/23/02

PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
212018 - 01	MW-13	AQUEOUS	12/03/02
212018 - 02	MW-12	AQUEOUS	12/03/02
212018 - 03	MW-15	AQUEOUS	12/03/02



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GENERAL CHEMISTRY RESULTS

CLIENT : BIOTECH REMEDIATION PINNACLE I.D. : 212018
PROJECT # : 810 DATE RECEIVED : 12/04/02
PROJECT NAME : THRIFTWAY REFINERY

SAMPLE			DATE	DATE	
ID. #	CLIENT I.D.	MATRIX	SAMPLED	ANALYZED	
01	MW-13	AQUEOUS	12/03/02	12/04/02	
02	MW-12	AQUEOUS	12/03/02	12/04/02	
03	MW-15	AQUEOUS	12/03/02	12/04/02	
PARAMETER		UNITS	MW-13	MW-12	MW-15
PH (150.1)		UNITS	7.16	7.15	6.41

CHEMIST NOTES:

NU



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Phone (505) 344-3777
Fax (505) 344-4413

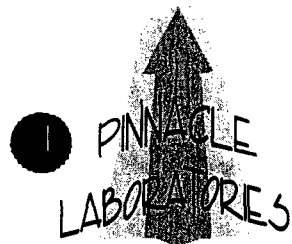
GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT	: BIOTECH REMEDIATION	PINNACLE I.D.	: 212018
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: THRIFTWAY REFINERY	DATE ANALYZED	: 12/04/02

PARAMETER	UNITS	PINNACLE I.D.	SAMPLE RESULT	DUP. RESULT	% RPD
PH	UNITS	212018-01	7.16	7.16	0

CHEMIST NOTES:
N/A

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



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Albuquerque, New Mexico 87107
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : BIOTECH REMEDIATION
PROJECT # : 810
PROJECT NAME : THRIFTWAY REFINERY

PINNACLE I.D.: 212018

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	MW-13	AQUEOUS	12/03/02	NA	12/05/02	1
02	MW-12	AQUEOUS	12/03/02	NA	12/05/02	5
03	MW-15	AQUEOUS	12/03/02	NA	12/05/02	1
PARAMETER		DET. LIMIT	UNITS	MW-13	MW-12	MW-15
BENZENE		0.5	UG/L	< 0.5	12	< 0.5
TOLUENE		0.5	UG/L	< 0.5	< 2.5	< 0.5
ETHYLBENZENE		0.5	UG/L	< 0.5	24	< 0.5
TOTAL XYLENES		1.0	UG/L	< 1.0	35	< 1.0
METHYL-t-BUTYL ETHER		2.5	UG/L	< 2.5	120	< 2.5

SURROGATE:

BROMOFLUOROBENZENE (%)

105

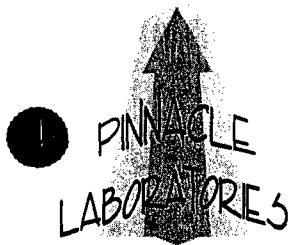
107

103

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



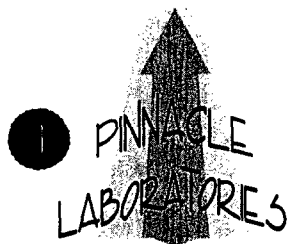
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 212018
BLANK I. D.	: 120502	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 12/05/02
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: THRIFTWAY REFINERY		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0
METHYL-t-BUTYL ETHER	UG/L	<2.5

SURROGATE:
BROMOFLUOROBENZENE (%) 102
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A



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Albuquerque, New Mexico 87107
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Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 212018
BATCH I.D. #	: 120502	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 12/05/02
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: THRIFTWAY REFINERY	UNITS	: UG/L

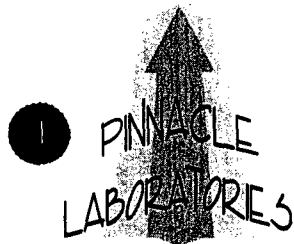
PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.6	98	19.6	98	0	(80 - 120)	20
TOLUENE	<0.5	20.0	20.6	103	20.6	103	0	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.4	107	21.3	107	0	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	65.2	109	64.9	108	0	(80 - 120)	20
METHYL-t-BUTYL ETHER	<2.5	20.0	20.0	100	20.0	100	0	(70 - 133)	20

CHEMIST NOTES:

N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



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Albuquerque, New Mexico 87107
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GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 212018
MSMSD #	: 212018-01	DATE EXTRACTED	: N/A
CLIENT	: BIOTECH REMEDIATION	DATE ANALYZED	: 12/05/02
PROJECT #	: 810	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: THRIFTWAY REFINERY	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.7	99	20.1	101	2	(80 - 120)	20
TOLUENE	<0.5	20.0	20.9	105	21.1	106	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.6	108	21.9	110	1	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	65.9	110	66.7	111	1	(80 - 120)	20
METHYL-t-BUTYL ETHER	<2.5	20.0	21.1	106	21.2	106	0	(70 - 133)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



Environmental Services Laboratory, Inc.

17400 SW Upper Boones Ferry Road, Suite 270 • Portland, OR 97224 • (503) 670-8520

December 13, 2002

Jacinta A. Tenorio
Pinnacle Laboratories
2709-D Pan American Fwy NE
Albuquerque, NM 87107

TEL: 505-344-3777

FAX (505) 344-4413

RE: 212018/BIO

Order No.: 0212052

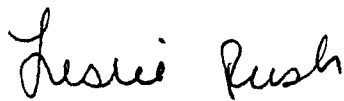
Dear Jacinta A. Tenorio:

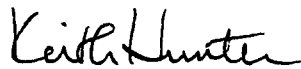
Environmental Services Laboratory received 3 samples on 12/6/02 for the analyses presented in the following report.

There were no analytical problems encountered and all associated QC data met EPA or laboratory specifications except where noted in a Case Narrative. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety, without the written approval of the laboratory. The following checked data sections are included in this report, and numbered to indicate total pages contained within each report section.

☒ Base Sample Report ☒ Method Blank Report ☒ Sample Duplicate Report ☒ Matrix Spike/Matrix Spike Duplicate Report ☒ Laboratory Control Spike/Spike Duplicate Report
☒ Continuing Calibration Verification Report ☐ Initial Calibration Verification Report

If you have any questions regarding these tests results, please feel free to call.


Project Manager


Technical Review

Environmental Services Laboratory

Date: 13-Dec-02

CLIENT: Pinnacle Laboratories

Client Sample ID: MW-13/212018-01

Lab Order: 0212052

Tag Number:

Project: 212018/BIO

Collection Date: 12/3/02

Lab ID: 0212052-01A

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM	(3510C)	Analyst: mrs		
1-Methylnaphthalene	ND	0.40		µg/L	4	12/12/02
2-Methylnaphthalene	ND	0.40		µg/L	4	12/12/02
Acenaphthene	ND	0.40		µg/L	4	12/12/02
Acenaphthylene	ND	0.40		µg/L	4	12/12/02
Anthracene	ND	0.40		µg/L	4	12/12/02
Benz(a)anthracene	ND	0.40		µg/L	4	12/12/02
Benzo(a)pyrene	ND	0.40		µg/L	4	12/12/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	12/12/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	12/12/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	12/12/02
Chrysene	ND	0.40		µg/L	4	12/12/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	12/12/02
Fluoranthene	ND	0.40		µg/L	4	12/12/02
Fluorene	ND	0.40		µg/L	4	12/12/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	12/12/02
Naphthalene	ND	0.40		µg/L	4	12/12/02
Phenanthrene	ND	0.40		µg/L	4	12/12/02
Pyrene	ND	0.40		µg/L	4	12/12/02
Surr: 2-Fluorobiphenyl	78.5	43-116		%REC	4	12/12/02
Surr: 4-Terphenyl-d14	92.0	33-141		%REC	4	12/12/02
Surr: Nitrobenzene-d5	91.0	35-114		%REC	4	12/12/02

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 13-Dec-02

CLIENT: Pinnacle Laboratories
Lab Order: 0212052
Project: 212018/BIO
Lab ID: 0212052-02A

Client Sample ID: MW-12/212018-02
Tag Number:
Collection Date: 12/3/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM		(3510C)		Analyst: mrs
1-Methylnaphthalene	51	0.40		µg/L	4	12/12/02
2-Methylnaphthalene	47	0.40		µg/L	4	12/12/02
Acenaphthene	0.60	0.40		µg/L	4	12/12/02
Acenaphthylene	ND	0.40		µg/L	4	12/12/02
Anthracene	ND	0.40		µg/L	4	12/12/02
Benz(a)anthracene	ND	0.40		µg/L	4	12/12/02
Benzo(a)pyrene	ND	0.40		µg/L	4	12/12/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	12/12/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	12/12/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	12/12/02
Chrysene	ND	0.40		µg/L	4	12/12/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	12/12/02
Fluoranthene	ND	0.40		µg/L	4	12/12/02
Fluorene	6.0	0.40		µg/L	4	12/12/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	12/12/02
Naphthalene	51	0.40		µg/L	4	12/12/02
Phenanthrene	4.0	0.40		µg/L	4	12/12/02
Pyrene	ND	0.40		µg/L	4	12/12/02
Surr: 2-Fluorobiphenyl	98.0	43-116		%REC	4	12/12/02
Surr: 4-Terphenyl-d14	96.0	33-141		%REC	4	12/12/02
Surr: Nitrobenzene-d5	87.0	35-114		%REC	4	12/12/02

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 13-Dec-02

CLIENT: Pinnacle Laboratories
Lab Order: 0212052
Project: 212018/BIO
Lab ID: 0212052-03A

Client Sample ID: MW-15/212018-03
Tag Number:
Collection Date: 12/3/02
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PAH BY SIM, AQUEOUS		8270-SIM	(3510C)	Analyst: mrs		
1-Methylnaphthalene	ND	0.40		µg/L	4	12/12/02
2-Methylnaphthalene	ND	0.40		µg/L	4	12/12/02
Acenaphthene	ND	0.40		µg/L	4	12/12/02
Acenaphthylene	ND	0.40		µg/L	4	12/12/02
Anthracene	ND	0.40		µg/L	4	12/12/02
Benz(a)anthracene	ND	0.40		µg/L	4	12/12/02
Benzo(a)pyrene	ND	0.40		µg/L	4	12/12/02
Benzo(b)fluoranthene	ND	0.40		µg/L	4	12/12/02
Benzo(g,h,i)perylene	ND	0.40		µg/L	4	12/12/02
Benzo(k)fluoranthene	ND	0.40		µg/L	4	12/12/02
Chrysene	ND	0.40		µg/L	4	12/12/02
Dibenz(a,h)anthracene	ND	0.40		µg/L	4	12/12/02
Fluoranthene	ND	0.40		µg/L	4	12/12/02
Fluorene	ND	0.40		µg/L	4	12/12/02
Indeno(1,2,3-cd)pyrene	ND	0.40		µg/L	4	12/12/02
Naphthalene	ND	0.40		µg/L	4	12/12/02
Phenanthrene	ND	0.40		µg/L	4	12/12/02
Pyrene	ND	0.40		µg/L	4	12/12/02
Surr: 2-Fluorobiphenyl	67.0	43-116		%REC	4	12/12/02
Surr: 4-Terphenyl-d14	84.0	33-141		%REC	4	12/12/02
Surr: Nitrobenzene-d5	63.0	35-114		%REC	4	12/12/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 13-Dec-02

CLIENT: Pinnacle Laboratories
Work Order: 0212052
Project: 212018/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: MB-5210	SampType: MBLK	TestCode: 06 PAH A	Units: µg/L	Prep Date: 12/9/02	Run ID: HEISENBURG_021212A						
Client ID: ZZZZZ	Batch ID: 5210	TestNo: 8270-SIM	(3510C)	Analysis Date: 12/12/02	SeqNo: 151272						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1-Methylnaphthalene	ND	0.10									
2-Methylnaphthalene	ND	0.10									
Acenaphthene	ND	0.10									
Acenaphthylene	ND	0.10									
Anthracene	ND	0.10									
Benz(a)anthracene	ND	0.10									
Benzo(a)pyrene	ND	0.10									
Benzo(b)fluoranthene	ND	0.10									
Benzo(g,h,i)perylene	ND	0.10									
Benzo(k)fluoranthene	ND	0.10									
Chrysene	ND	0.10									
Dibenz(a,h)anthracene	ND	0.10									
Fluoranthene	ND	0.10									
Fluorene	ND	0.10									
Indeno(1,2,3-cd)pyrene	ND	0.10									
Naphthalene	ND	0.10									
Phenanthrene	ND	0.10									
Pyrene	ND	0.10									
Surr: 2-Fluorobiphenyl	0.73	0	1	0	73	43	116	0	0		
Surr: 4-Terphenyl-d14	0.81	0	1	0	81	33	141	0	0		
Surr: Nitrobenzene-d5	0.65	0	1	0	65	35	114	0	0		

Sample ID: LCS-5210	SampType: LCS	TestCode: 06 PAH A	Units: µg/L	Prep Date: 12/9/02	Run ID: HEISENBURG_021212A						
Client ID: ZZZZZ	Batch ID: 5210	TestNo: 8270-SIM	(3510C)	Analysis Date: 12/12/02	SeqNo: 151273						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1-Methylnaphthalene	0.73	0.10	1	0	73	21	133	0	0		
2-Methylnaphthalene	0.5	0.10	1	0	50	21	133	0	0		
Acenaphthene	0.67	0.10	1	0	67	47	145	0	0		
Acenaphthylene	0.64	0.10	1	0	64	33	145	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0212052
 Project: 212018/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: LCS-5210	SampType: LCS	TestCode: 06 PAH A	Units: µg/L	Prep Date: 12/9/02	Run ID: HEISENBURG_021212A						
Client ID: ZZZZZ	Batch ID: 5210	TestNo: 8270-SIM	(3510C)	Analysis Date: 12/12/02	SeqNo: 151273						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Anthracene	0.71	0.10	1	0	71	27	133	0	0		
Benz(a)anthracene	0.72	0.10	1	0	72	33	143	0	0		
Benzo(a)pyrene	0.69	0.10	1	0	69	17	163	0	0		
Benzo(b)fluoranthene	0.57	0.10	1	0	57	24	159	0	0		
Benzo(g,h,i)perylene	0.77	0.10	1	0	77	1	219	0	0		
Benzo(k)fluoranthene	0.77	0.10	1	0	77	11	162	0	0		
Chrysene	0.73	0.10	1	0	73	17	168	0	0		
Dibenz(a,h)anthracene	0.62	0.10	1	0	62	1	227	0	0		
Fluoranthene	0.77	0.10	1	0	77	26	137	0	0		
Fluorene	0.66	0.10	1	0	66	59	121	0	0		
Indeno(1,2,3-cd)pyrene	0.73	0.10	1	0	73	1	171	0	0		
Naphthalene	0.66	0.10	1	0	66	21	133	0	0		
Phenanthrene	0.71	0.10	1	0	71	54	120	0	0		
Pyrene	0.7	0.10	1	0	70	52	115	0	0		
Surr: 2-Fluorobiphenyl	0.73	0	1	0	73	43	116	0	0		
Surr: 4-Terphenyl-d14	0.72	0	1	0	72	33	141	0	0		
Surr: Nitrobenzene-d5	0.59	0	1	0	59	35	114	0	0		

Sample ID: LCSD-5210	SampType: LCSD	TestCode: 06 PAH A	Units: µg/L	Prep Date: 12/9/02	Run ID: HEISENBURG_021212A						
Client ID: ZZZZZ	Batch ID: 5210	TestNo: 8270-SIM	(3510C)	Analysis Date: 12/12/02	SeqNo: 151274						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1-Methylnaphthalene	0.75	0.10	1	0	75	21	133	0.73	2.70	30	
2-Methylnaphthalene	0.59	0.10	1	0	59	21	133	0.5	16.5	30	
Acenaphthene	0.74	0.10	1	0	74	47	145	0.67	9.93	30	
Acenaphthylene	0.71	0.10	1	0	71	33	145	0.64	10.4	30	
Anthracene	0.8	0.10	1	0	80	27	133	0.71	11.9	30	
Benz(a)anthracene	0.75	0.10	1	0	75	33	143	0.72	4.08	30	
Benzo(a)pyrene	0.73	0.10	1	0	73	17	163	0.69	5.63	30	
Benzo(b)fluoranthene	0.61	0.10	1	0	61	24	159	0.57	6.78	30	
Benzo(g,h,i)perylene	0.8	0.10	1	0	80	1	219	0.77	3.82	30	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0212052
 Project: 212018/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: LCSD-5210	SampType: LCSD	TestCode: 06 PAH A	Units: µg/L	Prep Date: 12/9/02	Run ID: HEISENBURG_021212A						
Client ID: ZZZZZ	Batch ID: 5210	TestNo: 8270-SIM	(3510C)	Analysis Date: 12/12/02	SeqNo: 151274						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(k)fluoranthene	0.83	0.10	1	0	83	11	162	0.77	7.50	30	
Chrysene	0.77	0.10	1	0	77	17	168	0.73	5.33	30	
Dibenz(a,h)anthracene	0.62	0.10	1	0	62	1	227	0.62	0	30	
Fluoranthene	0.8	0.10	1	0	80	26	137	0.77	3.82	30	
Fluorene	0.77	0.10	1	0	77	59	121	0.66	15.4	30	
Indeno(1,2,3-cd)pyrene	0.74	0.10	1	0	74	1	171	0.73	1.36	30	
Naphthalene	0.76	0.10	1	0	76	21	133	0.66	14.1	30	
Phenanthrene	0.78	0.10	1	0	78	54	120	0.71	9.40	30	
Pyrene	0.84	0.10	1	0	84	52	115	0.7	18.2	30	
Surr: 2-Fluorobiphenyl	0.82	0	1	0	82	43	116	0	0	30	
Surr: 4-Terphenyl-d14	0.88	0	1	0	88	33	141	0	0	30	
Surr: Nitrobenzene-d5	0.71	0	1	0	71	35	114	0	0	30	

Sample ID: 0212052-01A MS	SampType: MS	TestCode: 06 PAH A	Units: µg/L	Prep Date: 12/9/02	Run ID: HEISENBURG_021212A						
Client ID: MW-13/212018-01	Batch ID: 5210	TestNo: 8270-SIM	(3510C)	Analysis Date: 12/12/02	SeqNo: 151277						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	3.24	0.40	4	0	81	21	133	0	0		
2-Methylnaphthalene	2.8	0.40	4	0	70	21	133	0	0		
Acenaphthene	3.56	0.40	4	0	89	47	145	0	0		
Acenaphthylene	3.4	0.40	4	0	85	33	145	0	0		
Anthracene	3.24	0.40	4	0	81	27	133	0	0		
Benz(a)anthracene	3.84	0.40	4	0	96	33	143	0	0		
Benzo(a)pyrene	3.48	0.40	4	0	87	17	163	0	0		
Benzo(b)fluoranthene	3.04	0.40	4	0	76	24	159	0	0		
Benzo(g,h,i)perylene	3.88	0.40	4	0	97	1	219	0	0		
Benzo(k)fluoranthene	3.52	0.40	4	0	88	11	162	0	0		
Chrysene	3.52	0.40	4	0	88	17	168	0	0		
Dibenz(a,h)anthracene	3.24	0.40	4	0	81	1	227	0	0		
Fluoranthene	3.84	0.40	4	0	96	26	137	0	0		
Fluorene	3.56	0.40	4	0	89	59	121	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories

Work Order: 0212052

Project: 212018/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: 0212052-01A MS	SampType: MS	TestCode: 06 PAH A	Units: µg/L	Prep Date: 12/9/02	Run ID: HEISENBURG_021212A						
Client ID: MW-13/212018-01	Batch ID: 5210	TestNo: 8270-SIM	(3510C)	Analysis Date: 12/12/02	SeqNo: 151277						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Indeno(1,2,3-cd)pyrene	3.8	0.40	4	0	95	1	171	0	0		
Naphthalene	3.44	0.40	4	0	86	21	133	0	0		
Phenanthrene	3.84	0.40	4	0	96	54	120	0	0		
Pyrene	3.36	0.40	4	0	84	52	115	0	0		
Surr: 2-Fluorobiphenyl	3.32	0	4	0	83	43	116	0	0		
Surr: 4-Terphenyl-d14	3.72	0	4	0	93	33	141	0	0		
Surr: Nitrobenzene-d5	3.16	0	4	0	79	35	114	0	0		

Sample ID: 0212052-02A DUP		SampType: DUP		TestCode: 06 PAH A		Units: µg/L		Prep Date: 12/9/02		Run ID: HEISENBURG_021212A	
Client ID: MW-12/212018-02		Batch ID: 5210		TestNo: 8270-SIM		(3510C)		Analysis Date: 12/12/02		SeqNo: 151279	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	28.4	0.40	0	0	0	0	0	51.2	57.4	20	R, Q
2-Methylnaphthalene	34.3	0.40	0	0	0	0	0	46.8	30.8	20	R, Q
Acenaphthene	0.48	0.40	0	0	0	0	0	0.6	22.2	20	R, Q
Acenaphthylene	ND	0.40	0	0	0	0	0	0	0	20	
Anthracene	ND	0.40	0	0	0	0	0	0	0	20	
Benz(a)anthracene	ND	0.40	0	0	0	0	0	0	0	20	
Benzo(a)pyrene	ND	0.40	0	0	0	0	0	0	0	20	
Benzo(b)fluoranthene	ND	0.40	0	0	0	0	0	0	0	20	
Benzo(g,h,i)perylene	ND	0.40	0	0	0	0	0	0	0	20	
Benzo(k)fluoranthene	ND	0.40	0	0	0	0	0	0	0	20	
Chrysene	ND	0.40	0	0	0	0	0	0	0	20	
Dibenz(a,h)anthracene	ND	0.40	0	0	0	0	0	0	0	20	
Fluoranthene	ND	0.40	0	0	0	0	0	0	0	20	
Fluorene	4.68	0.40	0	0	0	0	0	6	24.7	20	R, Q
Indeno(1,2,3-cd)pyrene	ND	0.40	0	0	0	0	0	0	0	20	
Naphthalene	31.1	0.40	0	0	0	0	0	50.8	48.2	20	R, Q
Phenanthrene	3.04	0.40	0	0	0	0	0	3.96	26.3	20	R, Q
Pyrene	ND	0.40	0	0	0	0	0	0	0	20	
Surr: 2-Fluorobiphenyl	3.32	0	4	0	83	43	116	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
 Work Order: 0212052
 Project: 212018/BIO

ANALYTICAL QC SUMMARY REPORT

TestCode: 06 PAH A

Sample ID: 0212052-02A DUP	SampType: DUP	TestCode: 06 PAH A	Units: µg/L	Prep Date: 12/19/02	Run ID: HEISENBURG_021212A						
Client ID: MW-12/212018-02	Batch ID: 5210	TestNo: 8270-SIM	(3510C)	Analysis Date: 12/12/02	SeqNo: 151279						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	3.36	0	4	0	84	33	141	0	0	0	
Surr: Nitrobenzene-d5	2.84	0	4	0	71	35	114	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: 06 PAH A	Units: µg/L	Prep Date:	Run ID: HEISENBURG_021212A						
Client ID: ZZZZZ	Batch ID: R12501	TestNo: 8270-SIM		Analysis Date: 12/12/02	SeqNo: 151275						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	1.12	0.10	1	0	112	80	120	0	0		
2-Methylnaphthalene	0.9	0.10	1	0	90	80	120	0	0		
Acenaphthene	1.04	0.10	1	0	104	80	120	0	0		
Acenaphthylene	0.99	0.10	1	0	99	80	120	0	0		
Anthracene	1.1	0.10	1	0	110	80	120	0	0		
Benz(a)anthracene	0.89	0.10	1	0	89	80	120	0	0		
Benzo(a)pyrene	0.97	0.10	1	0	97	80	120	0	0		
Benzo(b)fluoranthene	0.8	0.10	1	0	80	80	120	0	0		
Benzo(g,h,i)perylene	0.99	0.10	1	0	99	80	120	0	0		
Benzo(k)fluoranthene	1.07	0.10	1	0	107	80	120	0	0		
Chrysene	0.99	0.10	1	0	99	80	120	0	0		
Dibenz(a,h)anthracene	0.8	0.10	1	0	80	80	120	0	0		
Fluoranthene	1.06	0.10	1	0	106	80	120	0	0		
Fluorene	0.95	0.10	1	0	95	80	120	0	0		
Indeno(1,2,3-cd)pyrene	0.93	0.10	1	0	93	80	120	0	0		
Naphthalene	1.12	0.10	1	0	112	80	120	0	0		
Phenanthrene	0.96	0.10	1	0	96	80	120	0	0		
Pyrene	1.07	0.10	1	0	107	80	120	0	0		
Surr: 2-Fluorobiphenyl	0.86	0	1	0	86	43	116	0	0		
Surr: 4-Terphenyl-d14	1.09	0	1	0	109	33	141	0	0		
Surr: Nitrobenzene-d5	0.89	0	1	0	89	35	114	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

ENVIRONMENTAL SERVICES LABORATORY – GLOSSARY OF FLAGS

<u>QUALIFIER</u>	<u>DESCRIPTION</u>
AA	This sample was analyzed after the holding time had expired.
AB	The hydrocarbon pattern in this sample is not typical of gasoline.
AC	The hydrocarbon pattern in this sample is not typical of diesel.
AD	The hydrocarbon pattern in this sample is not typical of oil.
AE	The hydrocarbon pattern in this sample extends into the gasoline range.
AF	The hydrocarbon pattern in this sample extends into the diesel range.
AG	The hydrocarbon pattern in this sample extends into the oil range.
A	This analysis was performed on a VOA sample containing headspace.
B	Analyte detected in the Method Blank above the reporting level.
C	The Relative Percent Difference (RPD) for the primary result and confirmation result was greater than 40%. The higher result was reported.
D	The sample was supplied in an inappropriate container according to method criteria.
E	This value is above the quantitation limit. It is considered an estimate.
H	The Matrix Spike/Matrix Spike Duplicate (MS/MSD) result was outside control limits. The Laboratory Control Standard/Duplicate (LCS/LCSD) result was in control validating the batch.
J	The result is above the Method Detection Limit (MDL) and below the Reporting level (RL). It is considered an estimate.
M	The MS/MSD recoveries are not calculable due to a high amount of analyte in sample.
MI	This indicates a high level of matrix interference affecting the spike or surrogate recovery.
N	See case narrative.
O	Detection Limits are elevated due to sample dilution. See case narrative.
Q	Further inspection of the sample confirms a non-homogenous sample matrix affecting RPD result.
R	The RPD result is outside method control limits. See other qualifiers or case narrative.
S	The spike recovery is outside method control limits. See other qualifiers or case narrative.
T	The RPD between the sample result and duplicate result was greater than 20%. The original result was less than three times the reporting level, therefore the RPD is not applicable.
X	Unable to quantitate surrogate recovery due to sample dilution.

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-12096

Received: 06 DEC 02

Reported: 17 DEC 02

Ms. Jacinta Tenorio
Pinnacle Laboratories
2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Project: 212018-BIO/REFINERY

Sampled By: Client

Code: 134121217

Page 1

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED		
12096-1	MW-13/212018-01	12-03-02/12:03		
12096-2	MW-12/212018-02	12-03-02/12:41		
12096-3	MW-15/212018-03	12-03-02/13:35		
PARAMETER		12096-1	12096-2	12096-3
Alkalinity Series (2320B)				
Alkalinity (to pH 4.5) as CaCO ₃ , mg/l		270	790	190
PH, mg/l		7.5	7.6	7.7
Dilution Factor		1	1	1
Analysis Date		12.10.02	12.10.02	12.10.02
Batch ID		AEW048	AEW048	AEW048
Analyst		ST	ST	ST
CO ₂ and Forms of Alkalinity (4500D)				
Bicarbonate (2320/4500), mg/l		270	790	190
Carbon Dioxide, mg/l		17	40	8
Carbonate (2320/4500), mg/l		1.0	3.0	1.0
Hydroxide, mg/l		<1.0	<1.0	<1.0
Analysis Date		12.13.02	12.13.02	12.13.02
Analyst		WG	WG	WG
Chloride (4500E), mg/l		76	120	200
Dilution Factor		1	20	5
Analysis Date		12.09.02	12.09.02	12.09.02
Batch ID		CKW057A	CKW057A	CKW057A
Analyst		CR	CR	CR
Specific Conductance (120.1), umhos/cm		6900	8300	5400
Dilution Factor		1	1	1
Analysis Date		12.11.02	12.11.02	12.11.02
Batch ID		CDW026	CDW026	CDW026
Analyst		ST	ST	ST

STL Pensacola

LOG NO: C2-12096

Received: 06 DEC 02

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Project: 212018-BIO/REFINERY

Sampled By: Client

Code: 134121217

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED		
12096-1	MW-13/212018-01	12-03-02/12:03		
12096-2	MW-12/212018-02	12-03-02/12:41		
12096-3	MW-15/212018-03	12-03-02/13:35		
PARAMETER		12096-1	12096-2	12096-3
Fluoride (340.2), mg/l		1.1	1.9	0.94
Dilution Factor		1	1	1
Analysis Date		12.08.02	12.08.02	12.08.02
Batch ID		FLW049	FLW049	FLW049
Analyst		ST	ST	ST
Sulfate as SO4 (375.4), mg/l		3100	3800	2900
Dilution Factor		100	100	100
Analysis Date		12.13.02	12.13.02	12.13.02
Batch ID		SEW091	SEW091	SEW091
Analyst		BH	BH	BH
Total Dissolved Solids (160.1), mg/l		5400	6300	4200
Dilution Factor		1	1	1
Analysis Date		12.09.02	12.09.02	12.09.02
Batch ID		TDW073	TDW073	TDW073
Analyst		ST	ST	ST
Bromide (300.0), mg/l		0.84	1.4	2.5
Dilution Factor		5	10	10
Prep Date		12.16.02	12.16.02	12.16.02
Analysis Date		12.16.02	12.16.02	12.16.02
Batch ID		ICW008	ICW008	ICW008
Prep Method		300.0	300.0	300.0
Analyst		SB	SB	SB

SEVERN

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SERVICES

STL Pensacola

LOG NO: C2-12096

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2709-D Pan American Freeway Northeast
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Project: 212018-BIO/REFINERY

Sampled By: Client

Code: 134121217

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED		
12096-1	MW-13/212018-01	12-03-02/12:03		
12096-2	MW-12/212018-02	12-03-02/12:41		
12096-3	MW-15/212018-03	12-03-02/13:35		
PARAMETER		12096-1	12096-2	12096-3
Hardness by calculation (6010B)				
Hardness as CaCO ₃ , mg/l		1300	1400	1300
Dilution Factor		1	1	1
Prep Date		12.08.02	12.08.02	12.08.02
Analysis Date		12.10.02	12.10.02	12.10.02
Batch ID		PW488	PW488	PW488
Prep Method		3010A	3010A	3010A
Analyst		GSP	GSP	GSP
RCRA Metals (6010B)				
Arsenic, mg/l		<0.0050	0.0050	<0.0050
Barium, mg/l		0.011	0.063	0.026
Cadmium, mg/l		<0.0050	<0.0050	<0.0050
Chromium, mg/l		<0.0050	0.012	<0.0050
Lead, mg/l		<0.0050	<0.0050	<0.0050
Selenium, mg/l		<0.010	<0.010	<0.010
Silver, mg/l		<0.0050	<0.0050	<0.0050
Dilution Factor		1	1	1
Prep Date		12.08.02	12.08.02	12.08.02
Analysis Date		12.10.02	12.10.02	12.10.02
Batch ID		PW488	PW488	PW488
Prep Method		3010A	3010A	3010A
Analyst		GSP	GSP	GSP

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-12096

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2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Project: 212018-BIO/REFINERY

Sampled By: Client

Code: 134121217

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE/ TIME SAMPLED		
12096-1	MW-13/212018-01	12-03-02/12:03		
12096-2	MW-12/212018-02	12-03-02/12:41		
12096-3	MW-15/212018-03	12-03-02/13:35		
PARAMETER		12096-1	12096-2	12096-3
Mercury (7470A), mg/l		<0.00020	<0.00020	<0.00020
Dilution Factor		1	1	1
Prep Date		12.11.02	12.11.02	12.11.02
Analysis Date		12.11.02	12.11.02	12.11.02
Batch ID		HGW115	HGW115	HGW115
Prep Method		7470A	7470A	7470A
Analyst		JDE	JDE	JDE
Metals, Dissolved (6010B)				
Calcium, Dissolved, mg/l		460	420	480
Magnesium, Dissolved, mg/l		66	93	47
Potassium, Dissolved, mg/l		8.6	6.2	5.9
Sodium, Dissolved, mg/l		1100	1500	800
Dilution Factor		5	5	5
Prep Date		12.08.02	12.08.02	12.08.02
Analysis Date		12.10.02	12.10.02	12.10.02
Batch ID		PD125	PD125	PD125
Analyst		GSP	GSP	GSP

STL Pensacola

LOG NO: C2-12096

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Project: 212018-BIO/REFINERY

Sampled By: Client

Code: 134121217

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
12096-4	Method Blank				
12096-5	Lab Control Standard % Recovery				
12096-6	Matrix Spike % Recovery				
12096-7	Matrix Spike Duplicate % Recovery				
PARAMETER	12096-4	12096-5	12096-6	12096-7	
Alkalinity Series (2320B)					
Alkalinity (to pH 4.5) as CaCO ₃ , mg/l	<1.0	101 %	104 %	104 %	
Dilution Factor	1	---	---	---	
Analysis Date	12.10.02	---	---	---	
Batch ID	AEW048	AEW048	AEW048	AEW048	
Analyst	ST	---	---	---	
CO ₂ and Forms of Alkalinity (4500D)					
Bicarbonate (2320/4500), mg/l	N/A	N/A	N/A	N/A	
Chloride (4500E), mg/l					
Chloride (4500E), mg/l	<2.0	101 %	96 %	95 %	
Dilution Factor	1	---	---	---	
Analysis Date	12.09.02	---	---	---	
Batch ID	CKW057A	CKW057A	CKW057A	CKW057A	
Analyst	CR	---	---	---	
Specific Conductance (120.1), umhos/cm					
Specific Conductance (120.1), umhos/cm	<1.0	101 %	N/A	N/A	
Dilution Factor	1	---	---	---	
Analysis Date	12.11.02	---	---	---	
Batch ID	CDW026	CDW026	---	---	
Analyst	ST	---	---	---	

STL Pensacola

LOG NO: C2-12096

Received: 06 DEC 02

Reported: 17 DEC 02

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2709-D Pan American Freeway Northeast
Albuquerque, NM 87107

Project: 212018-BIO/REFINERY

Sampled By: Client

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED		
12096-4	Method Blank			
12096-5	Lab Control Standard % Recovery			
12096-6	Matrix Spike % Recovery			
12096-7	Matrix Spike Duplicate % Recovery			
PARAMETER	12096-4	12096-5	12096-6	12096-7
Fluoride (340.2), mg/l	<0.20	108 %	108 %	106 %
Dilution Factor	1	---	---	---
Analysis Date	12.08.02	---	---	---
Batch ID	FLW049	FLW049	FLW049	FLW049
Analyst	ST	---	---	---
Sulfate as SO4 (375.4), mg/l	<5.0	97 %	99 %	96 %
Dilution Factor	1	---	---	---
Analysis Date	12.13.02	---	---	---
Batch ID	SEW091	SEW091	SEW091	SEW091
Analyst	BH	---	---	---
Total Dissolved Solids (160.1), mg/l	<5.0	104 %	N/A	N/A
Dilution Factor	1	---	---	---
Analysis Date	12.09.02	---	---	---
Batch ID	TDW073	TDW073	---	---
Analyst	ST	---	---	---
Bromide (300.0), mg/l	<0.13	103 %	D	D
Dilution Factor	1	---	---	---
Prep Date	12.16.02	---	---	---
Analysis Date	12.16.02	---	---	---
Batch ID	ICW008	ICW008	ICW008	ICW008
Prep Method	300.0	---	---	---
Analyst	SB	---	---	---

STL Pensacola

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Project: 212018-BIO/REFINERY

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED			
12096-4	Method Blank				
12096-5	Lab Control Standard % Recovery				
12096-6	Matrix Spike % Recovery				
12096-7	Matrix Spike Duplicate % Recovery				
PARAMETER	12096-4	12096-5	12096-6	12096-7	
Hardness by calculation (6010B)					
Hardness as CaCO ₃ , mg/l	<3.3	---	---	---	
Dilution Factor	1	---	---	---	
Prep Date	12.08.02	---	---	---	
Analysis Date	12.10.02	---	---	---	
Batch ID	PW488	PW488	PW488	PW488	
Prep Method	3010A	---	---	---	
Analyst	GSP	---	---	---	
RCRA Metals (6010B)					
Arsenic, mg/l	<0.0050	102 %	102 %	103 %	
Barium, mg/l	<0.010	102 %	100 %	101 %	
Cadmium, mg/l	<0.0050	102 %	101 %	101 %	
Chromium, mg/l	<0.0050	103 %	102 %	104 %	
Lead, mg/l	<0.0050	105 %	103 %	105 %	
Selenium, mg/l	<0.010	101 %	100 %	101 %	
Silver, mg/l	<0.0050	101 %	102 %	101 %	
Dilution Factor	1	1	1	1	
Prep Date	12.08.02	12.08.02	12.08.02	12.08.02	
Analysis Date	12.10.02	12.10.02	12.10.02	12.10.02	
Batch ID	PW488	PW488	PW488	PW488	
Prep Method	3010A	3010A	3010A	3010A	
Analyst	GSP	---	---	---	

SEVERN

TRENT

SERVICES

STL Pensacola

LOG NO: C2-12096

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 Albuquerque, NM 87107

Project: 212018-BIO/REFINERY

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED		
12096-4	Method Blank			
12096-5	Lab Control Standard % Recovery			
12096-6	Matrix Spike % Recovery			
12096-7	Matrix Spike Duplicate % Recovery			
PARAMETER	12096-4	12096-5	12096-6	12096-7
Mercury (7470A), mg/l	<0.00020	102 %	99 %	100 %
Dilution Factor	1	---	---	---
Prep Date	12.11.02	---	---	---
Analysis Date	12.11.02	---	---	---
Batch ID	HGW115	HGW115	HGW115	HGW115
Prep Method	7470A	7470A	7470A	7470A
Analyst	JDE	---	---	---
Metals, Dissolved (6010B)				
Calcium, Dissolved, mg/l	<0.50	104 %	73 %M1	72 %M1
Magnesium, Dissolved, mg/l	<0.50	105 %	103 %	102 %
Potassium, Dissolved, mg/l	<1.0	100 %	98 %	93 %
Sodium, Dissolved, mg/l	<1.0	97 %	91 %	85 %
Dilution Factor	1	1	5	5
Prep Date	12.08.02	12.08.02	12.08.02	12.08.02
Analysis Date	12.10.02	12.10.02	12.10.02	12.10.02
Batch ID	PD125	PD125	PD125	PD125
Prep Method	---	N/A	N/A	N/A
Analyst	GSP	---	---	---

STL Pensacola

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Code: 134121217

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REPORT OF RESULTS

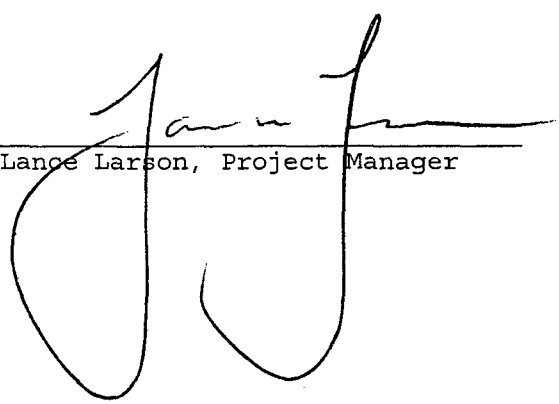
LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES	DATE/ TIME SAMPLED
12096-4	Method Blank	
12096-5	Lab Control Standard % Recovery	
12096-6	Matrix Spike % Recovery	
12096-7	Matrix Spike Duplicate % Recovery	

PARAMETER	12096-4	12096-5	12096-6	12096-7
-----------	---------	---------	---------	---------

These test results meet all the requirements of NELAC. All questions regarding this test report should be directed to the STL Project Manager who signed this test report.

Data from any samples that do not meet client, federal, or state sample acceptance criteria (collection, preservation, or holding time) will be flagged, or noted on a corrective action form or case narrative, or addressed on the Project Sample Inspection Form (PSIF).

A statement of the estimated uncertainty of the test result is available upon request.


Lance Larson, Project Manager

Final Page Of Report

Lab Order #: 022096Date Received: 12/6/02

- | | |
|--|---|
| <p>1. Was there a Chain of Custody? ☒ Yes ☐ No*</p> <p>2. Was Chain of Custody properly filled out and relinquished? ☒ Yes ☐ No*</p> <p>3. Were all samples properly labeled and identified? ☒ Yes ☐ No*</p> <p>4. Were samples received cold? ☒ Yes ☐ No* N/A
(Criteria: 2° - 6°C: STL-SOP 1055)</p> <p>5. Did samples require splitting or compositing*? Yes* ☒ No</p> <p>6. Were samples received in proper containers for analysis requested? ☒ Yes ☐ No*</p> <p>7. Were all sample containers received intact? ☒ Yes ☐ No*</p> | <p>8. Were samples checked for preservative? ☒ Yes ☐ No* N/A
(Check pH of all H₂O requiring preservative (STL-PN SOP 917) except VOA vials that require zero headspace)*</p> <p>9. Is there sufficient volume for analysis requested? ☒ Yes ☐ No* N/A (Can)</p> <p>10. Were samples received within Holding Time? ☒ Yes ☐ No*</p> <p>11. Is Headspace visible > 1/4" in diameter in VOA vials?* Yes* ☐ No ☒ N/A</p> <p>12. Were Trip Blanks Received? Yes ☐ No ☒ N/A</p> <p>13. If sent, were matrix spike bottles returned? Yes ☐ No* ☒ N/A</p> <p>14. If sent, were T-Handles returned? Yes ☐ No* ☒ N/A</p> <p>15. If any issues, how was PM notified? PSIF ☐ Verbal ☐</p> |
|--|---|

Airbill Number(s): 128781686143186216
128781686143859207Shipped By: ☒ UPS ☐ FedX ☐ HD ☐ BUS ☐ ABX

(HD - Hand Delivery)

Cooler Numbers & Temp(s) (°C): Chert 4°C Chert 4°C CCK11
(IE. 340L-4°C-CCK8 -- LIST THERMOMETER NUMBER FOR VERIFICATION)**Out of Control Events and Inspection Comments (list sample IDs/Tests where appropriate):**

1-3. COC/Sample ID/COC discrepancy: _____

4. Insufficient Ice ☐ Delay in delivery ☐ Other ☐ _____5. Samples were Split ☐ Composited ☐ Requested by: Client ☐ PM ☐ Other: _____

6. Improper Containers (ID/Size/desc): _____

7. Broken bottles/Test: _____

8. Incorrect pH: _____

9. Test/Matrix/Volume: _____

10. Out of Holding Time/Test: _____

11. VOA headspace > 1/4" (list ~ size) _____

List additional comments by above number: _____

(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: MHS Date: 12/6/02Logged By: LHK Date: 06-Dec-02

- * Note all Out-of-Control and/or questionable events on Comment Section of this form. For holding times, the analytical department will flag immediate hold time samples (pH, Dissolved O₂, Residual CL) as out of hold time, therefore, these samples will not be documented on this PSIF.
- * All volatile samples requested to be split or composited must be done in the Volatile Lab. Document: "Volatile sample values may be compromised due to sample splitting (compositing)"
- * All pH results for North Carolina, New York, and other requested samples are to be recorded on the pH log provided (STL-SOP 938).
- * According to EPA, 1/4" of headspace is acceptable in 40 ml vials requiring volatile analysis.

STL Pensacola Data Qualifiers for Final Report

B	The analyte was detected in the associated method blank and in the client's sample.
C	The compound has been quantitated against a one point calibration.
D	Recovery is not calculable due to dilution.
E	Estimated value because the analyte concentration exceeds the upper calibration range of the instrument or method.
I	Estimated value because the analyte concentration is less than the lower calibration range of the instrument but is at the method detection limit or greater than the method detection limit.
H	Sample and/or duplicate is below 5 X (times) the STL Reporting Limit and the absolute difference between the results exceeds the STL Reporting Limit.
J1	A sample surrogate or an LCS target compound recovered above the upper control limit (UCL). Compounds qualified with a J1 may be biased high.
J2	A sample surrogate or an LCS target compound recovered outside the lower control limit (LCL). Compounds qualified with a J2 may be biased low.
M1	A matrix effect was present.
M2	The MS and/or MSD %R or RPD was outside upper or lower control limits; not necessarily due to matrix effect.
N/C	Not Calculable; Sample spiked is > 4X spike concentration (may use this flag in place of negative numbers).
R1	Internal standard area exceeds the acceptance criteria
R2	Calibration verification exceeds the acceptance criteria.
S1	The Method of Standard Additions (MSA) has been performed on this sample.
T	Second-column or detector confirmation exceeded the SW-846 criteria of 40% RPD for this compound.
TIC	The compound is not included in the initial calibration curve. It is searched for qualitatively or as a Tentatively Identified Compound.
U or < W	The analyte was not detected at or above the MDL or the RL, whichever is entered next to the "U" or "<". Post-digestion spike for Furnace AA is out of control limits (85-115%), while sample absorbance is less than 50% spike absorbance.

It is permissible to submit an Out-of-Control Events/Corrective Action form and/or Case Narrative in lieu of using above qualifiers.

When the laboratory receives a sample that does not meet EPA requirements for sample collection, preservation or holding time, the laboratory is required to reject the samples. The client must be notified and asked whether the lab should proceed with analysis. Data from any samples that do not meet sample acceptance criteria (collection, preservation and holding time), must be flagged, or noted on a corrective action form or case narrative, or addressed on the Project Sample Inspection Form (PSIF) in an unambiguous manner clearly defining the nature and substance of the variation. NPDES samples from North Carolina that do not meet EPA requirements for sample collection, preservation or holding time are non-reportable for NPDES compliance monitoring.

Abbreviations

ND	Not Detected at or above the STL Pensacola reporting limit (RL)
NS	Not Submitted
NA	Not Applicable
MDL	STL Pensacola Method Detection Limit
RL	STL Pensacola Reporting Limit
NoMS	Not enough sample provided to prepare and/or analyze a method-required matrix spike (MS) and/or duplicate (MSD)

Florida Projects Inorganic/Organic

Refer to FL DEP 62-160.700(7); Table 7 Data Qualifier Codes. FL DEP Rule 62-160.670(1)(h) states that laboratories shall include the analytical result for each analysis with applicable data qualifiers. FL DEP Rule 62-160.700(7), Table 7 lists the FL DEP data qualifiers. FL DEP Rule 62-160.700(3), Table 3 lists the Florida sites which require data qualifiers.

AFCEE QAPP Projects

Refer to AFCEE QAPP for appropriate data qualifiers (AFCEE QAPP Version will be specified by client for the project).

Arizona DEQ Projects

Any qualified data submitted to Arizona DEQ (ADEQ) after January 1, 2001 must be designated using the Arizona Data Qualifiers as developed by the Arizona ELAC technical subcommittee. Refer to the ADEQ qualifier list.

CLP and CLP-like Projects

Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers. CLP SOW to be followed must be specified to client.

STL PENSACOLA
Certifications, Memberships & Affiliations

Alabama Department of Environmental Management, Laboratory ID No. 40150 (Drinking Water by Reciprocity with FL), expires 06/30/03

Arizona Department of Health Services, Lab ID No. AZ0589 (Hazardous Waste & Wastewater), expires 01/11/03

Arkansas Department of Pollution Control and Ecology, (No Laboratory ID No. assigned by state) (Environmental), expires 02/20/03

California Department of Health Services, **ELAP** Laboratory ID No. I-2510 (Hazardous Waste and Wastewater), expires 03/31/03

Connecticut Department of Health Services, Connecticut Lab Approval No. PH-0697 (D W, H W and Wastewater), expires 09/30/03

Florida DOH, **NELAP** Laboratory ID No. E81010 (Drinking Water, Hazardous Waste and Wastewater), expires 06/30/03

Florida DEP/DOH CompQAP # 980156

Iowa Department of Natural Resources, Laboratory ID No. 367 (UST), expires 08/01/04

Kansas Department of Health & Environment, **NELAP** Laboratory ID No. E10253 (Wastewater and Hazardous Waste), expires 10/31/03

Kentucky NR&EPC, Laboratory ID No. 90043 (Drinking Water), expires 12/31/02.

Louisiana DEQ, LELAP, **NELAP** Laboratory ID No. 02075, Agency Interest ID 30748 (Environmental), expires 6/30/03

Maryland DH&MH Laboratory ID No. 233 (Drinking Water by Reciprocity with Florida), expires 09/30/03

Massachusetts DEP, Laboratory ID No. M-FL094 (Wastewater), expires 06/30/03

Michigan Bureau of E&Occh, Laboratory ID No.9912 (Drinking Water by Reciprocity with Florida), expires 06/30/03

New Hampshire DES ELAP, **NELAP** Laboratory ID No. 250502 (Drinking Water & Wastewater), expires 08/16/03

New Jersey DEP&E, **NELAP** Laboratory ID No. FL006 (Wastewater and Hazardous Waster), expires 06/30/03.

New York State Department of Health, **NELAP** Laboratory ID No. 11503 (WW and Solids/Hazardous Waste), expires 04/01/2003

North Carolina DENR, Laboratory ID No. 314 (Hazardous Waste and Wastewater), expires 12/31/02.

North Dakota DH&Consol Labs, Laboratory ID No. R-108 Wastewater and Hazardous Waste by Reciprocity with Florida), expires 06/30/03

Oklahoma Department of Environmental Quality, Laboratory ID No. 9810 (Hazardous Waste and Wastewater), expires 08/31/03

Pennsylvania Department of Environmental Resources, **NELAP** Laboratory ID No. 68-467 (Drinking Water & Wastewater), expires 12/01/02

South Carolina DH&EC, Laboratory ID No. 96026 (Wastewater & Solids/Hazardous Waste by Reciprocity with FL), expires 06/30/03

Tennessee Department of Health & Environment, Laboratory ID No. 02907 (Drinking Water), expires 08/03/04

Virginia Department of General Services, Laboratory ID No. 00008 (Drinking Water by Reciprocity with FL), expires 06/30/03.

Washington Department of Ecology, Laboratory ID No. C282 (Hazardous Waste and Wastewater), expires 09/14/03.

West Virginia DOE, Office of Water Resources, Laboratory ID No. 136 (Haz Waste and Wastewater), expires 04/30/02.

AIHA (American Industrial Hygiene Association) Accredited Laboratory, Laboratory ID No. 100704, expires April 1, 2004. Participant in AIHA sponsored Laboratory PAT Rounds

EPA ICR (Information Collection Rule) Approved Laboratory, Laboratory ID No. ICRFL031

NFESC (Naval Facilities Engineering Services Center), expires December 31, 2002.

USACE (United States Army Corps. of Engineers), MRD, expires January 5, 2003.

STL Pensacola also has a foreign soil permit to accept soils from locations other than the continental United States. Permit No. S-37599

certlist\condcert.lst revised 11/15/02

Total Pages of Report

13

Date: 12/5/02 Page:

Interlaminar Chain of Custody

Pinnacle Laboratories, Inc.



Network Project Manager: Jacinta Tenorio

Jacinta Tenorio

Pinnacle Laboratories, Inc.

2709-D Pan American Freeway, NE

Albuquerque, NM 87107

(505) 344-3777 Fax (505) 344-4413

Dissolved metals have been filtered & preserved.

02/2096

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
MW-13/212018-01	12/3/02	1203	AO	
MW-12/212018-02	↓	1241	↓	
MW-15/212018-03	↓	1335	↓	

[illegible]

ANALYSIS REQUEST

[illegible]

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT #:	212018	Total Number of Containers		PENSACOLA - STL-FL	☒	Signature:	<i>Monique J. J. J.</i>	Signature:	
PROJ. NAME:	B10	Chain of Custody Seals		ESL - OR		Date:	1700	Date:	
QC LEVEL:	STD IV	Received Intact?		ATEL - AZ		Printed Name:	<i>Monique J. J. J.</i>	Printed Name:	
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		ATEL - MARION		Date:	12/5/02	Date:	
TEST:	STANDARD RUSH!!	LAB NUMBER:		ATEL - MELMORE		Company	Pinnacle Laboratories, Inc.	Company	
				RELINQUISHED BY:	1.	RECEIVED BY:		2.	
COMMENTS:				Signature:	<i>Mark</i>	Signature:		Signature:	
				Date:		Date:		Date:	
RUSH SURCHARGE:									
CLIENT DISCOUNT:									
SPECIAL CERTIFICATION									
REQUIRED: YES NO									

PROJECT MANAGER: TERRY C. GIFFIN

COMPANY: BUREAU OF REMEDIATION INC.
 ADDRESS: 501 AIRPORT DR. SUITE 104
 FARMINGTON, NM 87401
 PHONE: 505-327-4965
 FAX:
 BILL TO: Same
 COMPANY:
 ADDRESS:

SAMPLE ID DATE TIME MATRY LAB ID

MW-13 12-3-2 1203 H²O 01
 MW-12 1241 02
 MW-15 1335 03

ANALYSIS REQUEST

ANALYSIS REQUEST	NUMBER OF CONTAINERS
Petroleum Hydrocarbons (418.1) TPH	
(MOD.8015) Diesel/Direct Inject	
(M8015) Gas/Purge & Trap	
8021 (BTEX)/8015 (Gasoline) MTBE	
8021 (BTEX) MTBE □ TMB □ PCE	
8021 (TCL)	
8021 (EDX)	
8021 (HALO)	
8021 (CUST)	
504.1 EDB □ / DBCP □	
8260 (TCL) Volatile Organics	
8260 (Full) Volatile Organics	
8260 (CUST) Volatile Organics	
8260 (Landfill) Volatile Organics	
Pesticides/PCB (608/8081/8082)	
Herbicides (615/8151)	
Base/Neutral/Acid Compounds GC/MS (625/8270)	
Polynuclear Aromatics (610/8310/8270-SIMS)	
General Chemistry: EC TDS CI	
So ₄ , Br, F, Alk + Bicarb/Carb	
Priority Pollutant Metals (13)	
Target Analyte List Metals (23)	
RCRA Metals (8) Ca, Mg, K, Na	
RCRA Metals by TCLP (Method 1311)	
Metals: Diss. Ca, Mg, K, Na	
H ₂ O WSS	

PROJECT INFORMATION

PROJ. NO.: 810

PROJ. NAME: INTERIM REMEDIATION

P.O. NO.:

SHIPPED VIA:

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) □ 24hr □ 48hr □ 72hr □ 1 WEEK

CERTIFICATION REQUIRED □ NM □ SDWA □ OTHER

METHANOL PRESERVATION □

COMMENTS: FIXED FEE □

RELINQUISHED BY:

Signature: Mike Bergman
 Printed Name: Mike Bergman
 Date: 12-4-22
 Company: Bureau of Remediation
 See reverse side (Force Majeure)

RELINQUISHED BY:

Signature: [Blank]
 Printed Name: [Blank]
 Date: [Blank]
 Company: [Blank]

SAMPLE RECEIPT
 CONTAINERS
 CUSTODY SEAL
 PREPARED BY
 DATE

RECEIVED BY: [Blank]
 Signature: [Blank]
 Printed Name: [Blank]
 Date: [Blank]
 Company: [Blank]

RECEIVED BY: [Blank]
 Signature: [Blank]
 Printed Name: [Blank]
 Date: [Blank]
 Company: [Blank]

SHADED AREAS ARE FOR LAB USE ONLY

PLEASE FILL THIS FORM IN COMPLETELY.

APPENDIX C
Soils Bill of Lading

PHONE: (505) 632-0615 • 5796 U.S. HIGHWAY 64 • FARMINGTON, NEW MEXICO 87401

JOB #

13130

DATE 05/07/02

MANIFEST		COMPLETE DESCRIPTION OF SHIPMENT					TRANSPORTING COMPANY				
NO.	POINT OF ORIGIN	DESTINATION	MATERIAL	GRID	YDS	BBLs	COMPANY	TRK#	TIME	DRIVER SIGNATURE	
1	Biotech	LF #3	CONT Soil	D9	18		Inland	29	11:10	Bob Sink	
2	Biotech	LF #3	CONT Soil	D9	18		PAIGE 1	23	11:10	PAIGE	
3	Biotech	LF #3	CONT Soil	D9	18		Inland	17	11:12	Bob Sink	
4	Biotech	LF #3	CONT Soil	D9	18		Inland	29	2:33	Bob Sink	
5	Biotech	LF #3	CONT Soil	D9	18		PAIGE 1	23	2:33	PAIGE	
6	Biotech	LF #3	CONT Soil	D9	18		Inland	17	2:37	PAIGE	

ENTERED MAY 1 5 2002

"I certify the material hauled from the above location has not been added to or mixed with, and is the same material received from the above mentioned Generator, and that no additional materials have been added"

NAME Tina / AJG

COMPANY ENVIAOTECH

SIGNATURE

To Re-order Call 325-9600 or Fax 325-9764 ~~extending supplies~~. FORM #01

DATE 050707

0	8	1	3	3	8	5						
---	---	---	---	---	---	---	--	--	--	--	--	--

GENERATOR SHIPPER LOCATION

FOR SERVICE CALL	BRANCH MAIL
505 864-7777	MARK CHAMP CREDIT
DUNS NO. 05106-0408	FED. ID NO. 36-6769010

REFERENCE NUMBER

BILL 10: (IF DIFFERENT FROM LOCATION)

FED. ID NO. 39-6090019
(N)

NAME	TITLE	SIGNATURE
1.		
2.		

[illegible][illegible]

LOCATION					
BUSINESS TYPE	CHAIN	GUTEN COUNTRY	SVC. P/C	PROD. P/C	
7					

SERVICE DATE	SALESREP NO.	CUSTOMER P.O. NUMBER	CUSTOMER PHONE #	TAX CODE	HANDLING CODE	ASSOC. CODE	SERVICE TAX	C.O.M.S. TAX	PRODUCT TAX
3-12-03	29456		781-775-1111						
							TERMINARY	CREDIT CODE	TAX EXEMPTION NO.
SEQUENCE#									

DEF	PRODUCT	UNIT PRICE	QUANTITY	CHARGE	SALES TAX	TOTAL CHARGE	CHLORINE TEST RESULTS		SK DOT NUMBER	CC	SERVICE TERM	CHANGE SERVICE TERM (WEEKS)	CHANGE SERVICE TERM (MONTHS)	PROMO NO.	RELEASE NO.
	66447		930	950	55.72	1025.72	MADE TEST	CHLORINE TEST							
	0901	75		4136		79.76	RESULTS	RESULTS							
TOTAL SERVICE/PRODUCTS			930												
GENERATOR STATUS - CHECK ONLY ONE BOX						TANK CAPACITY		TRANSPORTER							
						10846		DATE 2/12/03							

GENERATION OF THIS DOCUMENT IS ONLY ONE BOX BELOW						
HAZARDOUS WASTE CLASSIFICATION	VEHICLE FLUIDS ONLY	OTHER NON-VEHICLE FLUIDS	1 NO PRECIPITANT REQUIRED; NO HALOGEN TEST	2 NO PRECIPITANT REQUIRED; NO HALOGEN TEST AT PICK-UP	3 PRECIPITANT REQUIRED; NO HALOGEN TEST	4 PRECIPITANT REQUIRED; NO HALOGEN TEST
GESGSG	☒ 1	☐ 3				
SQG/QLOG	☐ 2	☐ 4				
11. USE DOT DESCRIPTION (INCLUDING PROPER SHIPPING NAME, HAZARD CLASS, AND ID.)						
UNIFORMED - AERIALS FOR THE BOMBING						
SCRD006075 L5D						
GENERAL INFORMATION						
PRINT NAME Last First Middle						
FACILITY XXXXXX						
DATE MM/DD/YYYY						
SIGNATURE <i>[Signature]</i>						
PRINT NAME XXXXXXXXXX						
X X X X X X X X X X						

DESCRIPTION		12 CONTAINERS TO NO. TYPE	TOTAL QUANTITY	14 UNIT WEIGHT	SR DOT NUMBER	SIGNATURE
USED OIL AND WAXED MIXTURE (NOT USED OF HAZARDOUS MATERIAL.)					830	
USED ANTIFREEZE (NOT USED OF ODDOR HAZARDOUS MATERIAL.)		01 #	950 G		927	



WE CARE

[illegible][illegible][illegible]

APPENDIX D
Soil Sample Laboratory Analyses
QA/QC Data and COC Records

OFF: (505) 325-5667
FAX: (505) 327-1496



810/701
LAB: (505) 325-1556
FAX: (505) 327-1496

February 23, 2002

Terry Griffin
BioTech Remediation, Inc.
510 Airport Drive, Suite 104
Farmington, NM 87401
TEL: (505) 327-4965
FAX (505) 564-3604

RE: Stockpiled Soils

Order No.: 0202005

Dear Terry Griffin,

On Site Technologies, LTD. received 3 samples on 02/01/2002 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

- Cyanide, Reactive (SW7.3.3.2)
- Ignitability (SW1010)
- Soil and Waste pH (SW9045C)
- Sulfide, Reactive (SW7.3.4.2)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

David Cox

P.O. BOX 2606 • FARMINGTON, NM 87499

EMAIL: ONSITE@ONSITELTD.COM

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667
FAX: (505) 327-1496



LAB: (505) 325-1556
FAX: (505) 327-1496

On Site Technologies, LTD.

Date: 23-Feb-02

CLIENT: BioTech Remediation, Inc.
Project: Stockpiled Soils
Lab Order: 0202005

CASE NARRATIVE

Three soil samples were sub-contracted to Test America for analysis.

TestAmerica

INCORPORATED

2/12/02

ON SITE TECHNOLOGIES, LTD. 3130
DAVE COX
612 E. MURRAY DRIVE
FARMINGTON, NM 87401

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project

. The Laboratory Project number is 270584.

An executed copy of the chain of custody and the sample receipt form are also included as an addendum to this report.

Sample Identification	Lab Number	Page 1 Collection Date
-----	-----	-----
0202005-01A	02-A17267	2/ 1/02
0202005-02A	02-A17268	2/ 1/02
0202005-03A	02-A17269	2/ 1/02

These results relate only to the items tested.
This report shall not be reproduced except in full and with
permission of the laboratory.

Report Approved By: Paul E. Lane, Jr.

Report Date: 2/12/02

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director
Jennifer P. Flynn, Technical Services

Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

TestAmerica

INCORPORATED

ANALYTICAL REPORT

ON SITE TECHNOLOGIES, LTD. 3130
DAVE COX
612 E. MURRAY DRIVE
FARMINGTON, NM 87401

Lab Number: 02-A17267
Sample ID: 0202005-01A
Sample Type: Soil
Site ID:

Project:
Project Name:
Sampler:

Date Collected: 2/ 1/02
Time Collected: 14:24
Date Received: 2/ 5/02
Time Received: 9:00
Page: 1

Stockpile Soils; 701 Soil Bore Cuttings

2/23/02

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
GENERAL CHEMISTRY PARAMETERS										
Reactive Cyanide	ND	mg/kg	50.0	50.0	1	2/ 6/02	21:00	Abdullatef	SW-846	395
Reactive Sulfide	ND	mg/kg	100.	100.	1	2/ 6/02	21:00	Abdullatef	SW-846	395
Ignitability	NOT IGNITABLE UP TO 200F					2/12/02	14:00	T. Beverly	1010M	5145
pH	9.30	pH units			1	2/ 7/02	18:30	B. Powell	9045	898

LABORATORY COMMENTS:

ND - Not detected at the report limit.

- Recovery outside Laboratory historical or method prescribed limits.

Flash point/ignitability reported to the nearest 10 deg F.

All results reported on a wet weight basis.

of Sample Report.

TestAmerica

INCORPORATED

ANALYTICAL REPORT

ON SITE TECHNOLOGIES, LTD. 3130
DAVE COX
612 E. MURRAY DRIVE
FARMINGTON, NM 87401

Lab Number: 02-A17268
Sample ID: 0202005-02A
Sample Type: Soil
Site ID:

Project:
Project Name:
Sampler:
Stockpile Soils; Refinery Tank #23 Excavation

Date Collected: 2/ 1/02
Time Collected: 14:40
Date Received: 2/ 5/02
Time Received: 9:00
Page: 1

HS
2/23/02

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
GENERAL CHEMISTRY PARAMETERS										
Reactive Cyanide	ND	mg/kg	50.0	50.0	1	2/ 6/02	21:00	Abdullatef	SW-846	395
Reactive Sulfide	ND	mg/kg	100.	100.	1	2/ 6/02	21:00	Abdullatef	SW-846	395
Ignitability	NOT IGNITABLE UP TO 200F					2/12/02	14:00	T. Beverly	1010M	5145
pH	8.10	pH units			1	2/ 7/02	18:30	B. Powell	9045	898

LABORATORY COMMENTS:

ND - Not detected at the report limit.

- Recovery outside Laboratory historical or method prescribed limits.

Flash point/ignitability reported to the nearest 10 deg F.

All results reported on a wet weight basis.

End of Sample Report.

ANALYTICAL REPORT

ON SITE TECHNOLOGIES, LTD. 3130
DAVE COX
612 E. MURRAY DRIVE
FARMINGTON, NM 87401

Lab Number: 02-A17269
Sample ID: 0202005-03A
Sample Type: Soil
Site ID:

Project:
Project Name:
Sampler:

Date Collected: 2/ 1/02
Time Collected: 14:46
Date Received: 2/ 5/02
Time Received: 9:00
Page: 1

Stockpile Soils; Refinery North Side Stockpile

2/23/02

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
GENERAL CHEMISTRY PARAMETERS										
Reactive Cyanide	ND	mg/kg	50.0	50.0	1	2/ 6/02	21:00	Abdullatef	SW-846	395
Reactive Sulfide	ND	mg/kg	100.	100.	1	2/ 6/02	21:00	Abdullatef	SW-846	395
Ignitability	NOT IGNITABLE UP TO 200F					2/12/02	14:00	T. Beverly	1010M	5145
pH	8.50	pH units			1	2/ 7/02	18:30	B. Powell	9045	898

LABORATORY COMMENTS:

ND - Not detected at the report limit.

- Recovery outside Laboratory historical or method prescribed limits.

Flash point/ignitability reported to the nearest 10 deg F.

All results reported on a wet weight basis.

End of Sample Report.

PROJECT QUALITY CONTROL DATA
Project Number:
Page: 1

- Value outside Laboratory historical or method prescribed QC limits.

SAMPLE NONCONFORMANCE/COC REVISION FORM

TestAmerica

Nashville Division

ACCT NO. 3130

270584

DATE RECEIVED 2.5.02

COMPANY DST LTD

Relinquished by:	Date/Time:	Received by:	Date/Time:
CW	2.5.02 1420	<i>[Signature]</i>	2-5/2:22p
Relinquished by:	Date/Time:	Received by:	Date/Time:
<i>[Signature]</i>	2-5/5:40p	CW	2.6.02 800
Relinquished by:	Date/Time:	Received by:	Date/Time:

PROBLEM(S):

FOC/TOC?

METALS LIST?

TPH METHOD?

TCLP WHAT?

EDB METHOD?

HERB LIST- LONG OR SHORT?

NEED LIST OF COMPOUNDS:

8260 INSTEAD OF 8021?

TEMPERATURE UPON RECEIPT

SATURDAY DELIVERY MARKED?

ICE -- OR-- NO ICE??

FIELD TEST-- OUT OF HOLD

NO COC - PLEASE FAX

NO ANALYSIS REQUESTED

DOCUMENTATION LEVEL?

OUT OF HOLDING TIME-- TEST

OTHER: We don't do steel plate any more, we do pH.
OK?

RESOLUTION: Run pH

CONTACTED	DATE/TIME	EMAIL	LEFT MESSAGE
<i>Martin</i>			
<i>Dave Cox</i>	5 Feb 02		

TESTAMERICA, INC. - NASHVILLE

COOLER RECEIPT FORM

Client: On Site Tech LTD BC# 270584

Cooler Received On: 2.5.02 And Opened On: 2.5.02 By: Chris Wilmoth

C. Wilmoth
(Signature)

1. Temperature of Cooler when opened 4 Degrees Celsius
2. Were custody seals on outside of cooler?.....☒ YES...NO
 - a. If yes, how many, what kind and where: 1 Front
3. Were custody seals on containers and intact?.....NO...YES
4. Were the seals intact, signed, and dated correctly?.....☒ YES...NO
5. Were custody papers inside cooler?.....☒ YES...NO
6. Were custody papers properly filled out (ink, signed, etc)?.....☒ YES...NO
7. Did you sign the custody papers in the appropriate place?.....☒ YES...NO
8. What kind of packing material used? ☒ Bubblewrap Peanuts Vermiculite Other None
9. Was sufficient ice used (if appropriate)?.....☒ YES...NO
10. Did all bottles arrive in good condition (unbroken)?.....☒ YES...NO
11. Were all bottle labels complete (#, date, signed, pres, etc)?.....☒ YES...NO
12. Did all bottle labels and tags agree with custody papers?.....☒ YES...NO
13. Were correct bottles used for the analysis requested?.....☒ YES...NO
14. a. Were VOA vials received?.....YES...NO
 - b. Was there any observable head space present in any VOA vial?.....NO...YES
15. Was sufficient amount of sample sent in each bottle?.....☒ YES...NO
16. Were correct preservatives used?.....YES...NO
17. Was residual chlorine present?.....NO...YES
18. Corrective action taken, if necessary:

See attached for resolution

On Site Technologies, LTD.

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

CHAIN-OF-CUSTODY RECORD

Subcontractor:

Test America, Inc.
2960 Foster Creighton Drive
Nashville, TN 37204-0566

TEL: (800) 765-0980
FAX: (615) 726-3404

Nashville, TN 37204-0566

Acct #: 3130

2/4/02

04-Feb-02

Sample ID	Matrix	Collection Date	Bottle Type	SW1010	SW6045C	Cyanide	Requested Tests	
0202005-01A	Soil	02/01/2002 2:24:00 PM	4OZG	1	1	1	1	17267
0202005-02A	Soil	02/01/2002 2:40:00 PM	4OZG	1	1	1	1	68
0202005-03A	Soil	02/01/2002 2:46:00 PM	4OZG	1	1	1	1	17269

Comments:

Please analyze three (3) soils for RCI.

Relinquished by: David D. Ingham

2/4/02

1530

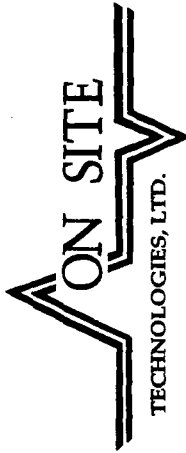
Date/Time

Received by:
Received by:

C. Holt

2.5.02 0800

Date/Time



CHAIN OF CUSTODY RECORD

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 2-1-02

Page: 1 of 1

508

Purchase Order No.:		Project No. 2002-0001		REPORT TO		Name		Title	
SEND INVOICE TO		Name		Company		Mailing Address		City, State, Zip	
Address		Dept.		Telephone No.		Telefax No.			
City, State, Zip									
PROJECT LOCATION:				ANALYSIS REQUESTED					
SAMPLER'S SIGNATURE:				LAB ID					
SAMPLE IDENTIFICATION				LAB ID					
DATE				TIME		MATRIX		PRES.	
2-1-02				10:30		1		1	
2-1-02				11:00		1		1	
2-1-02				11:30		1		1	
2-1-02				12:00		1		1	
2-1-02				12:30		1		1	
2-1-02				13:00		1		1	
2-1-02				13:30		1		1	
2-1-02				14:00		1		1	
2-1-02				14:30		1		1	
2-1-02				15:00		1		1	
2-1-02				15:30		1		1	
2-1-02				16:00		1		1	
2-1-02				16:30		1		1	
2-1-02				17:00		1		1	
2-1-02				17:30		1		1	
2-1-02				18:00		1		1	
2-1-02				18:30		1		1	
2-1-02				19:00		1		1	
2-1-02				19:30		1		1	
2-1-02				20:00		1		1	
2-1-02				20:30		1		1	
2-1-02				21:00		1		1	
2-1-02				21:30		1		1	
2-1-02				22:00		1		1	
2-1-02				22:30		1		1	
2-1-02				23:00		1		1	
2-1-02				23:30		1		1	
2-1-02				24:00		1		1	
2-1-02				24:30		1		1	
2-1-02				25:00		1		1	
2-1-02				25:30		1		1	
2-1-02				26:00		1		1	
2-1-02				26:30		1		1	
2-1-02				27:00		1		1	
2-1-02				27:30		1		1	
2-1-02				28:00		1		1	
2-1-02				28:30		1		1	
2-1-02				29:00		1		1	
2-1-02				29:30		1		1	
2-1-02				30:00		1		1	
2-1-02				30:30		1		1	
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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

810

February 22, 2002

Ms. Terry Griffin
BioTech
710 East 20th
Farmington, NM 87401

Phone: (505) 327-4965

Dear Ms. Griffin,

Enclosed are the analytical results for the sample collected from the location designated as "Thriftway Refinery Lagoons". One solid sample was collected by Envirotech designated personnel on 2/14/02, and received by the Envirotech laboratory on 2/14/02 for TCLP W/O Herbicides and Pesticides.

The sample was documented on Envirotech Chain of Custody No. 8918. The sample was assigned Laboratory No. 22039 (Evaporation Basin) for tracking purposes.

The sample was analyzed 2/19/02 through 2/20/02 using USEPA or equivalent methods.

Should you have any questions or require additional information, please do not hesitate to contact us at (505) 632-0615.

Respectfully submitted,
Envirotech, Inc.


Christine M. Walters
Laboratory Coordinator / Environmental Scientist

enc.

CMW/cmw

C:/files/labreports/biotech.wpd

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

SUSPECTED HAZARDOUS WASTE ANALYSIS

Client:	Thriftway	Project #:	02008-001
Sample ID:	Evaporation Basin	Date Reported:	02-19-02
Lab ID#:	22039	Date Sampled:	02-14-02
Sample Matrix:	Solids	Date Received:	02-14-02
Preservative:	Cool	Date Analyzed:	02-15-02
Condition:	Cool and Intact	Chain of Custody:	8918

Parameter	Result
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IGNITABILITY: Negative

CORROSIVITY: Negative pH = 8.08

REACTIVITY: Negative

RCRA Hazardous Waste Criteria

Parameter	Hazardous Waste Criterion
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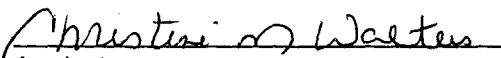
IGNITABILITY: Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21.
(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)

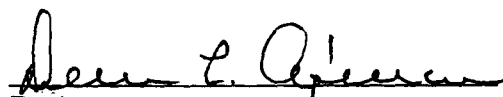
CORROSIVITY: Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22.
(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)

REACTIVITY: Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23.
(i.e. Violent reaction with water, strong base, strong acid, or the generation of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)

Reference: 40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments: (Biotech, Inc.) Thriftway Refinery Lagoons.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHODS 8010/8020
AROMATIC / HALOGENATED
VOLATILE ORGANICS

Client:	Thriftway	Project #:	02008-001
Sample ID:	Evaporation Basin	Date Reported:	02-19-02
Laboratory Number:	22039	Date Sampled:	02-14-02
Chain of Custody:	8918	Date Received:	02-14-02
Sample Matrix:	TCLP Extract	Date Extracted:	02-15-02
Preservative:	Cool	Date Analyzed:	02-19-02
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limits (mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	0.0096	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	0.0241	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

ND - Parameter not detected at the stated detection limit.

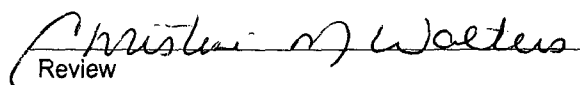
QA/QC Acceptance Criteria	Parameter	Percent Recovery
	Fluorobenzene	100%
	1,4-difluorobenzene	100%
	4-bromochlorobenzene	100%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.
Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994.
Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: (Biotech, Inc.) Thriftway Refinery Lagoons.


Analyst


Review

Client:	Thriftway	Project #:	02008-001
Sample ID:	Evaporation Basin	Date Reported:	02-20-02
Laboratory Number:	22039	Date Sampled:	02-14-02
Chain of Custody:	8918	Date Received:	02-14-02
Sample Matrix:	TCLP Extract	Date Extracted:	02-15-02
Preservative:	Cool	Date Analyzed:	02-20-02
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-Fluorophenol	98%
	2,4,6-Tribromophenol	99%

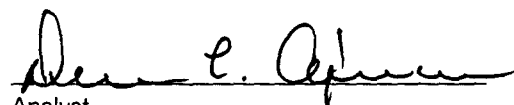
References: Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

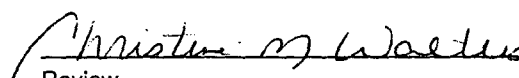
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: (Biotech Inc.) Thriftway Refinery Lagoons.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8090
Nitroaromatics and Cyclic Ketones
TCLP Base/Neutral Organics

Client:	Thriftway	Project #:	02008-001
Sample ID:	Evaporation Basin	Date Reported:	02-20-02
Laboratory Number:	22039	Date Sampled:	02-14-02
Chain of Custody:	8918	Date Received:	02-14-02
Sample Matrix:	TCLP Extract	Date Extracted:	02-15-02
Preservative:	Cool	Date Analyzed:	02-20-02
Condition:	Cool and Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

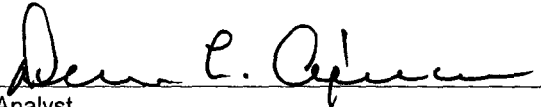
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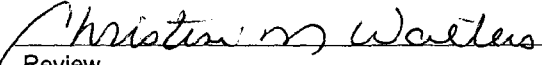
QA/QC Acceptance Criteria	Parameter	Percent Recovery
	2-fluorobiphenyl	100%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.
Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: (Biotech Inc) Thriftway Refinery Lagoons.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 1311
TOXICITY CHARACTERISTIC
LEACHING PROCEDURE
TRACE METAL ANALYSIS

Client:	Thriftway	Project #:	02008-001
Sample ID:	Evaporation Basin	Date Reported:	02-19-02
Laboratory Number:	22039	Date Sampled:	02-14-02
Chain of Custody:	8918	Date Received:	02-14-02
Sample Matrix:	TCLP Extract	Date Analyzed:	02-19-02
Preservative:	Cool	Date Extracted:	02-15-02
Condition:	Cool & Intact	Analysis Needed:	TCLP metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	0.005	0.001	5.0
Barium	2.27	0.001	100
Cadmium	0.010	0.001	1.0
Chromium	0.665	0.001	5.0
Lead	0.943	0.001	5.0
Mercury	0.002	0.001	0.2
Selenium	0.001	0.001	1.0
Silver	0.004	0.001	5.0

ND - Parameter not detected at the stated detection limit.

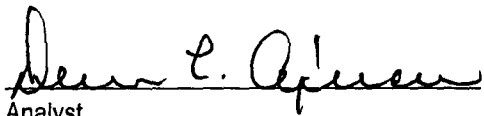
References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, December 1996.

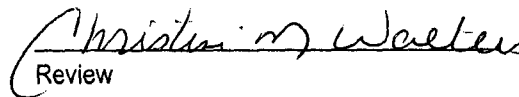
Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission SW-846, USEPA. December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: (Biotech, Inc.) Thriftway Refinery Lagoons.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHODS 8010/8020
AROMATIC / HALOGENATED
VOLATILE ORGANICS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	02-19-02
Laboratory Number:	02-19-TCV	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-19-02
Condition:	N/A	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limits (mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	ND	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	ND	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

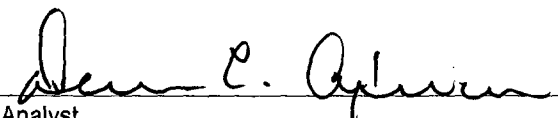
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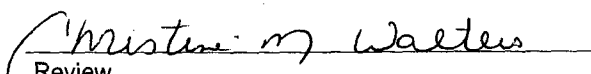
QA/QC Acceptance Criteria	Parameter	Percent Recovery
	Fluorobenzene	100%
	1,4-difluorobenzene	100%
	4-bromochlorobenzene	100%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.
Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994.
Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHODS 8010/8020
AROMATIC / HALOGENATED
VOLATILE ORGANICS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Method Blank	Date Reported:	02-19-02
Laboratory Number:	02-14-TCV	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-19-02
Condition:	N/A	Date Extracted:	02-14-02
		Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limits (mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	ND	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	ND	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

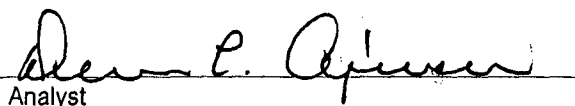
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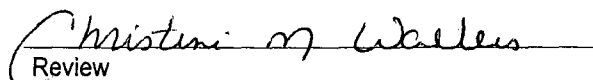
QA/QC Acceptance Criteria	Parameter	Percent Recovery
	Fluorobenzene	99%
	1,4-difluorobenzene	98%
	4-bromochlorobenzene	98%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.
Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994.
Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHODS 8010/8020
AROMATIC / HALOGENATED
VOLATILE ORGANICS
QUALITY ASSURANCE REPORT

Client: QA/QC
Sample ID: Matrix Duplicate
Laboratory Number: 22037
Sample Matrix: TCLP Extract
Analysis Requested: TCLP
Condition: N/A

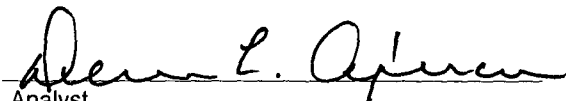
Project #: N/A
Date Reported: 02-19-02
Date Sampled: N/A
Date Received: N/A
Date Analyzed: 02-19-02
Date Extracted: 02-14-02

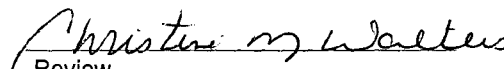
Parameter	Sample Result (mg/L)	Duplicate Sample Result (mg/L)	Detection Limits (mg/L)	Percent Difference
Vinyl Chloride	ND	ND	0.0001	0.0%
1,1-Dichloroethene	ND	ND	0.0001	0.0%
2-Butanone (MEK)	0.0087	0.0087	0.0001	0.0%
Chloroform	ND	ND	0.0001	0.0%
Carbon Tetrachloride	ND	ND	0.0001	0.0%
Benzene	0.0018	0.0018	0.0001	0.0%
1,2-Dichloroethane	ND	ND	0.0001	0.0%
Trichloroethene	ND	ND	0.0003	0.0%
Tetrachloroethene	ND	ND	0.0005	0.0%
Chlorobenzene	ND	ND	0.0003	0.0%
1,4-Dichlorobenzene	ND	ND	0.0002	0.0%

ND - Parameter not detected at the stated detection limit.

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.
Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994.
Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHODS 8010/8020
AROMATIC / HALOGENATED
VOLATILE ORGANICS
QUALITY ASSURANCE REPORT

Client: QA/QC
Sample ID: Matrix Spike
Laboratory Number: 22037
Sample Matrix: TCLP Extract
Analysis Requested: TCLP
Condition: N/A

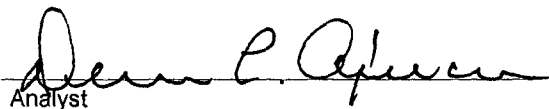
Project #: N/A
Date Reported: 02-19-02
Date Sampled: N/A
Date Received: N/A
Date Analyzed: 02-19-02
Date Extracted: 02-14-02

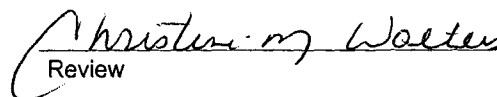
Parameter	Sample Result (mg/L)	Spike Added (mg/L)	Spiked Sample Result (mg/L)	Det. Limit (mg/L)	Percent Recovery	SW-846 % Rec. Accept. Range
Vinyl Chloride	ND	0.050	0.0495	0.0001	99%	28-163
1,1-Dichloroethene	ND	0.050	0.0494	0.0001	99%	43-143
2-Butanone (MEK)	0.0087	0.050	0.0577	0.0001	98%	47-132
Chloroform	ND	0.050	0.0500	0.0001	100%	49-133
Carbon Tetrachloride	ND	0.050	0.0490	0.0001	98%	43-143
Benzene	0.0018	0.050	0.0513	0.0001	99%	39-150
1,2-Dichloroethane	ND	0.050	0.0490	0.0001	98%	51-147
Trichloroethene	ND	0.050	0.0495	0.0003	99%	35-146
Tetrachloroethene	ND	0.050	0.0495	0.0005	99%	26-162
Chlorobenzene	ND	0.050	0.0495	0.0003	99%	38-150
1,4-Dichlorobenzene	ND	0.050	0.0495	0.0002	99%	42-143

ND - Parameter not detected at the stated detection limit.

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.
Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994.
Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8040

PHENOLS

Quality Assurance Report

Laboratory Blank

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	02-20-02
Laboratory Number:	02-20-TCA	Date Sampled:	N/A
Sample Matrix:	2-Propanol	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-20-02
Condition:	N/A	Analysis Requested:	TCLP

Analytical Results			
Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-fluorophenol	98 %
	2,4,6-tribromophenol	99 %

References: Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

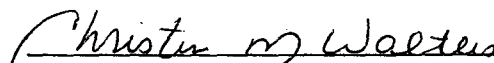
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

Client:	QA/QC	Project #:	N/A
Sample ID:	Method Blank	Date Reported:	02-20-02
Laboratory Number:	02-14-TCA-MB	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Date Analyzed:	02-20-02
		Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-Fluorophenol	98%
	2,4,6-Tribromophenol	99%

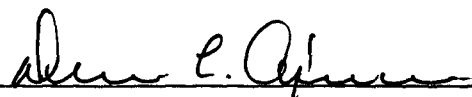
References: Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

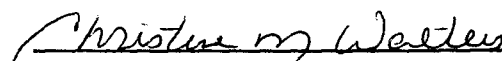
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8040 PHENOLS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	02-20-02
Laboratory Number:	22037	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Preservative:	Cool	Date Extracted:	02-14-02
Condition:	Cool & Intact	Date Analyzed:	02-20-02
		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Detection Limit (mg/L)	Percent Difference
o-Cresol	ND	ND	0.020	0.0%
p,m-Cresol	ND	ND	0.040	0.0%
2,4,6-Trichlorophenol	ND	ND	0.020	0.0%
2,4,5-Trichlorophenol	ND	ND	0.020	0.0%
Pentachlorophenol	ND	ND	0.020	0.0%

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Maximum Difference
	8040 Compounds	30.0%

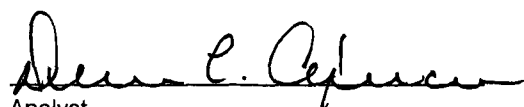
References: Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

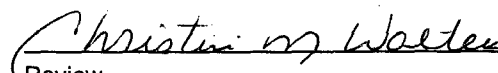
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8090
Nitroaromatics and Cyclic Ketones
TCLP Base/Neutral Organics
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	02-20-02
Laboratory Number:	02-20-TBN	Date Sampled:	N/A
Sample Matrix:	Hexane	Date Received:	N/A
Preservative:	N/A	Date Extracted:	N/A
Condition:	N/A	Date Analyzed:	02-20-02
		Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

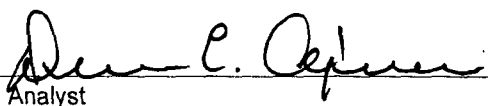
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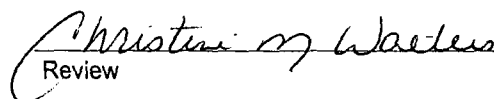
QA/QC Acceptance Criteria	Parameter	Percent Recovery
	2-fluorobiphenyl	100%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.
Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8090
Nitroaromatics and Cyclic Ketones
TCLP Base/Neutral Organics
QUALITY ASSURANCE REPORT

Client:	QA/QC	Project #:	N/A
Sample ID:	Method Blank	Date Reported:	02-20-02
Laboratory Number:	02-14-TBN-MB	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Preservative:	Cool	Date Extracted:	02-14-02
Condition:	Cool and Intact	Date Analyzed:	02-20-02
		Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

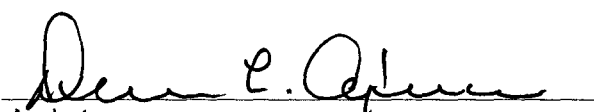
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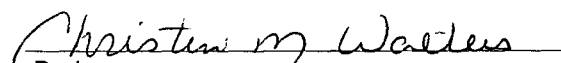
QA/QC Acceptance Criteria	Parameter	Percent Recovery
	2-fluorobiphenyl	100%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.
Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8090
Nitroaromatics and Cyclic Ketones
TCLP Base/Neutral Organics
QA/QC Matrix Duplicate Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	02-20-02
Laboratory Number:	22037	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Preservative:	N/A	Date Extracted:	02-14-02
Condition:	N/A	Date Analyzed:	02-20-02
		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Percent Difference	Det. Limit (mg/L)
Pyridine	ND	ND	0.0%	0.020
Hexachloroethane	ND	ND	0.0%	0.020
Nitrobenzene	0.102	0.101	0.0%	0.020
Hexachlorobutadiene	ND	ND	0.0%	0.020
2,4-Dinitrotoluene	0.034	0.034	0.0%	0.020
HexachloroBenzene	ND	ND	0.0%	0.020

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria	Parameter	Maximum Difference
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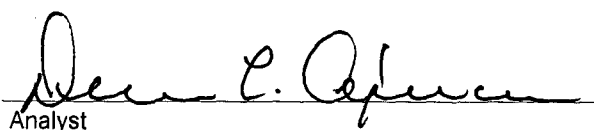
8090 Compounds

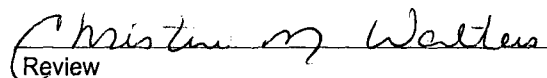
30%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.
Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	02-19-TCM QA/QC	Date Reported:	02-19-02
Laboratory Number:	22037	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Analysis Requested:	TCLP Metals	Date Analyzed:	02-19-02
Condition:	N/A	Date Extracted:	N/A

Blank & Duplicate Conc. (mg/L)	Instrument Blank	Method Blank	Detection Limit	Sample	Duplicate	% Difference	Acceptance Range
Arsenic	ND	ND	0.001	0.046	0.046	0.0%	0% - 30%
Barium	ND	ND	0.001	0.267	0.265	0.7%	0% - 30%
Cadmium	ND	ND	0.001	0.039	0.039	0.0%	0% - 30%
Chromium	ND	ND	0.001	0.149	0.147	1.3%	0% - 30%
Lead	ND	ND	0.001	0.283	0.280	1.1%	0% - 30%
Mercury	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.001	0.024	0.024	0.0%	0% - 30%
Silver	ND	ND	0.001	ND	ND	0.0%	0% - 30%

Spike Conc. (mg/L)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Arsenic	0.500	0.046	0.545	99.8%	80% - 120%
Barium	0.500	0.267	0.763	99.5%	80% - 120%
Cadmium	0.500	0.039	0.537	99.6%	80% - 120%
Chromium	0.500	0.149	0.647	99.7%	80% - 120%
Lead	0.500	0.283	0.781	99.7%	80% - 120%
Mercury	0.050	ND	0.049	98.0%	80% - 120%
Selenium	0.500	0.024	0.523	99.8%	80% - 120%
Silver	0.500	ND	0.499	99.8%	80% - 120%

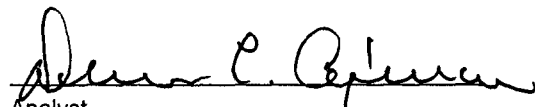
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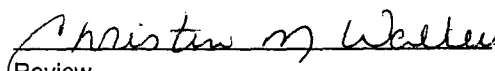
References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, Dec. 1996

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals,
SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission,
SW-846, USEPA, December 1996.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

08918

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

810

February 22, 2002

Ms. Terry Griffin
BioTech
710 East 20th
Farmington, NM 87401

Phone: (505) 327-4965

Dear Ms. Griffin,

Enclosed are the analytical results for the sample collected from the location designated as "Hwy 550, NM". This is the water draw-off sumps at the Thriftway Refinery Crude Oil Tanks. One water sample was collected by Envirotech designated personnel on 2/14/02, and received by the Envirotech laboratory on 2/14/02 for TCLP W/O Herbicides and Pesticides.

The sample was documented on Envirotech Chain of Custody No. 8919. The sample was assigned Laboratory No. 22041 (SM-2 & SM-1) for tracking purposes.

The sample was analyzed 2/19/02 through 2/20/02 using USEPA or equivalent methods.

Should you have any questions or require additional information, please do not hesitate to contact us at (505) 632-0615.

Respectfully submitted,
Envirotech, Inc.

Christine M. Walters
Christine M. Walters
Laboratory Coordinator / Environmental Scientist

enc.

CMW/cmw

C:/files/labreports/biotech.wpd

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

SUSPECTED HAZARDOUS WASTE ANALYSIS

Client:	Thriftway	Project #:	02008-001
Sample ID:	SM-2 + SM-1	Date Reported:	02-19-02
Lab ID#:	22041	Date Sampled:	02-14-02
Sample Matrix:	Water	Date Received:	02-14-02
Preservative:	Cool	Date Analyzed:	02-15-02
Condition:	Cool and Intact	Chain of Custody:	8919

Parameter	Result
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IGNITABILITY: Negative

CORROSIVITY: Negative pH = 6.84

REACTIVITY: Negative

RCRA Hazardous Waste Criteria

Parameter	Hazardous Waste Criterion
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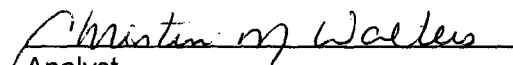
IGNITABILITY: Characteristic of Ignitability as defined by 40 CFR, Subpart C, Sec. 261.21.
(i.e. Sample ignition upon direct contact with flame or flash point < 60° C.)

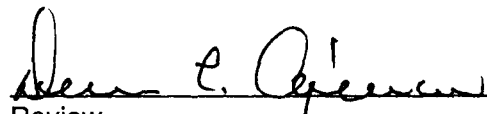
CORROSIVITY: Characteristic of Corrosivity as defined by 40 CFR, Subpart C, Sec. 261.22.
(i.e. pH less than or equal to 2.0 or pH greater than or equal to 12.5)

REACTIVITY: Characteristic of Reactivity as defined by 40 CFR, Subpart C, Sec. 261.23.
(i.e. Violent reaction with water, strong base, strong acid, or the generation of Sulfide or Cyanide gases at STP with pH between 2.0 and 12.5)

Reference: 40 CFR part 261 Subpart C sections 261.21 - 261.23, July 1, 1992.

Comments: Hwy 550, NM.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHODS 8010/8020
AROMATIC / HALOGENATED
VOLATILE ORGANICS

Client:	Thriftway	Project #:	02008-001
Sample ID:	SM-2 + SM-1	Date Reported:	02-19-02
Laboratory Number:	22041	Date Sampled:	02-14-02
Chain of Custody:	8919	Date Received:	02-14-02
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	02-19-02
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limits (mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	0.0081	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	0.0231	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

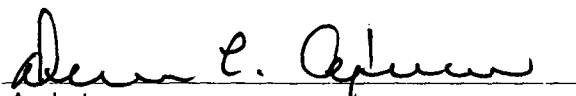
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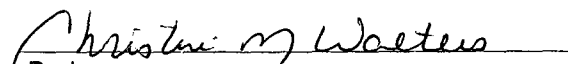
QA/QC Acceptance Criteria	Parameter	Percent Recovery
	Fluorobenzene	100%
	1,4-difluorobenzene	100%
	4-bromochlorobenzene	100%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.
Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994.
Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: Hwy 550, NM.


Analyst


Review

Client:	Thriftway	Project #:	02008-001
Sample ID:	SM-2 + SM-1	Date Reported:	02-20-02
Laboratory Number:	22041	Date Sampled:	02-14-02
Chain of Custody:	8919	Date Received:	02-14-02
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	02-20-02
Condition:	Cool & Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-Fluorophenol	98%
	2,4,6-Tribromophenol	99%

References: Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

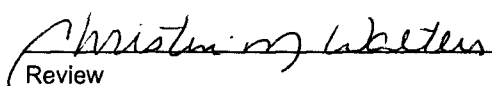
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: Hwy 550, NM.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

☐ PA Method 8090
Nitroaromatics and Cyclic Ketones
TCLP Base/Neutral Organics

Client:	Thriftway	Project #:	02008-001
Sample ID:	SM-2 + SM-1	Date Reported:	02-20-02
Laboratory Number:	22041	Date Sampled:	02-14-02
Chain of Custody:	8919	Date Received:	02-14-02
Sample Matrix:	Water	Date Extracted:	N/A
Preservative:	Cool	Date Analyzed:	02-20-02
Condition:	Cool and Intact	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

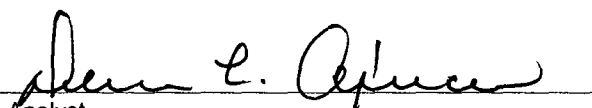
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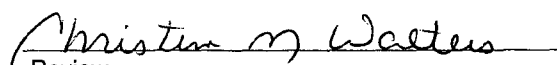
QA/QC Acceptance Criteria	Parameter	Percent Recovery
	2-fluorobiphenyl	97%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.
Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: Hwy 550, NM.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE TRACE METAL ANALYSIS

Client:	Thriftway	Project #:	02008-001
Sample ID:	SM-2 + SM-1	Date Reported:	02-19-02
Laboratory Number:	22041	Date Sampled:	02-14-02
Chain of Custody:	8919	Date Received:	02-14-02
Sample Matrix:	Water	Date Analyzed:	02-19-02
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Analysis Needed:	TCLP metals

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Level (mg/L)
Arsenic	ND	0.001	5.0
Barium	0.301	0.001	100
Cadmium	0.002	0.001	1.0
Chromium	0.091	0.001	5.0
Lead	0.107	0.001	5.0
Mercury	ND	0.001	0.2
Selenium	ND	0.001	1.0
Silver	ND	0.001	5.0

ND - Parameter not detected at the stated detection limit.

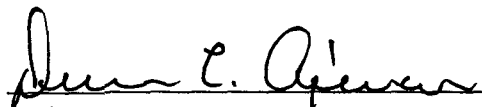
References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, December 1996.

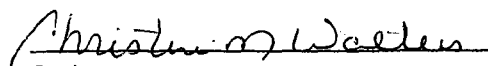
Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals, SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission SW-846, USEPA. December 1996.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, August 24, 1998.

Comments: Hwy 550, NM.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

QUALITY ASSURANCE / QUALITY CONTROL

DOCUMENTATION

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHODS 8010/8020
AROMATIC / HALOGENATED
VOLATILE ORGANICS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	02-19-02
Laboratory Number:	02-19-TCV	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-19-02
Condition:	N/A	Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limits (mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	ND	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	ND	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

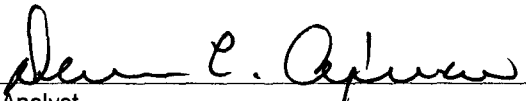
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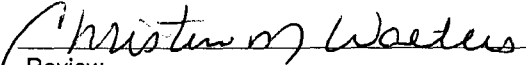
QA/QC Acceptance Criteria	Parameter	Percent Recovery
	Fluorobenzene	100%
	1,4-difluorobenzene	100%
	4-bromochlorobenzene	100%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.
Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994.
Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHODS 8010/8020
AROMATIC / HALOGENATED
VOLATILE ORGANICS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Method Blank	Date Reported:	02-19-02
Laboratory Number:	02-14-TCV	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-19-02
Condition:	N/A	Date Extracted:	02-14-02
		Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Detection Limit (mg/L)	Regulatory Limits (mg/L)
Vinyl Chloride	ND	0.0001	0.2
1,1-Dichloroethene	ND	0.0001	0.7
2-Butanone (MEK)	ND	0.0001	200
Chloroform	ND	0.0001	6.0
Carbon Tetrachloride	ND	0.0001	0.5
Benzene	ND	0.0001	0.5
1,2-Dichloroethane	ND	0.0001	0.5
Trichloroethene	ND	0.0003	0.5
Tetrachloroethene	ND	0.0005	0.7
Chlorobenzene	ND	0.0003	100
1,4-Dichlorobenzene	ND	0.0002	7.5

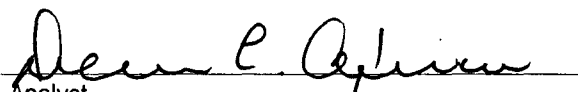
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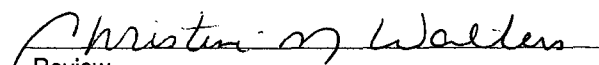
QA/QC Acceptance Criteria	Parameter	Percent Recovery
	Fluorobenzene	99%
	1,4-difluorobenzene	98%
	4-bromochlorobenzene	98%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.
Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994.
Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHODS 8010/8020
AROMATIC / HALOGENATED
VOLATILE ORGANICS
QUALITY ASSURANCE REPORT

Client: QA/QC
Sample ID: Matrix Duplicate
Laboratory Number: 22037
Sample Matrix: TCLP Extract
Analysis Requested: TCLP
Condition: N/A

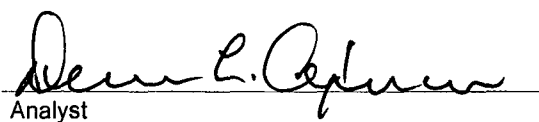
Project #: N/A
Date Reported: 02-19-02
Date Sampled: N/A
Date Received: N/A
Date Analyzed: 02-19-02
Date Extracted: 02-14-02

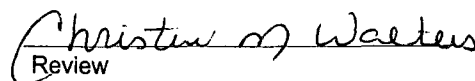
Parameter	Sample Result (mg/L)	Duplicate Sample Result (mg/L)	Detection Limits (mg/L)	Percent Difference
Vinyl Chloride	ND	ND	0.0001	0.0%
1,1-Dichloroethene	ND	ND	0.0001	0.0%
2-Butanone (MEK)	0.0087	0.0087	0.0001	0.0%
Chloroform	ND	ND	0.0001	0.0%
Carbon Tetrachloride	ND	ND	0.0001	0.0%
Benzene	0.0018	0.0018	0.0001	0.0%
1,2-Dichloroethane	ND	ND	0.0001	0.0%
Trichloroethene	ND	ND	0.0003	0.0%
Tetrachloroethene	ND	ND	0.0005	0.0%
Chlorobenzene	ND	ND	0.0003	0.0%
1,4-Dichlorobenzene	ND	ND	0.0002	0.0%

ND - Parameter not detected at the stated detection limit.

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.
Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994.
Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHODS 8010/8020
AROMATIC / HALOGENATED
VOLATILE ORGANICS
QUALITY ASSURANCE REPORT

Client: QA/QC
Sample ID: Matrix Spike
Laboratory Number: 22037
Sample Matrix: TCLP Extract
Analysis Requested: TCLP
Condition: N/A

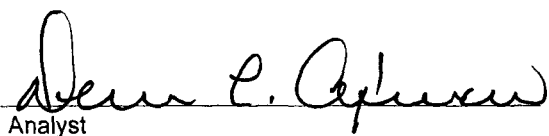
Project #: N/A
Date Reported: 02-19-02
Date Sampled: N/A
Date Received: N/A
Date Analyzed: 02-19-02
Date Extracted: 02-14-02

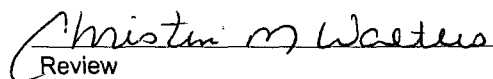
Parameter	Sample Result (mg/L)	Spike Added (mg/L)	Spiked Sample Result (mg/L)	Det. Limit (mg/L)	Percent Recovery	SW-846 % Rec. Accept. Range
Vinyl Chloride	ND	0.050	0.0495	0.0001	99%	28-163
1,1-Dichloroethene	ND	0.050	0.0494	0.0001	99%	43-143
2-Butanone (MEK)	0.0087	0.050	0.0577	0.0001	98%	47-132
Chloroform	ND	0.050	0.0500	0.0001	100%	49-133
Carbon Tetrachloride	ND	0.050	0.0490	0.0001	98%	43-143
Benzene	0.0018	0.050	0.0513	0.0001	99%	39-150
1,2-Dichloroethane	ND	0.050	0.0490	0.0001	98%	51-147
Trichloroethene	ND	0.050	0.0495	0.0003	99%	35-146
Tetrachloroethene	ND	0.050	0.0495	0.0005	99%	26-162
Chlorobenzene	ND	0.050	0.0495	0.0003	99%	38-150
1,4-Dichlorobenzene	ND	0.050	0.0495	0.0002	99%	42-143

ND - Parameter not detected at the stated detection limit.

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 5030, Purge-and-Trap, SW-846, USEPA, July 1992.
Method 8010, Halogenated Volatile Organic, SW-846, USEPA, Sept. 1994.
Method 8020, Aromatic Volatile Organics, SW-846, USEPA, Sept. 1994.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8040

PHENOLS

Quality Assurance Report Laboratory Blank

Client:	QA/QC	Project #:	N/A
Sample ID:	Laboratory Blank	Date Reported:	02-20-02
Laboratory Number:	02-20-TCA	Date Sampled:	N/A
Sample Matrix:	2-Propanol	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	02-20-02
Condition:	N/A	Analysis Requested:	TCLP

Analytical Results	Concentration	Detection	Regulatory
Parameter	(mg/L)	Limit	Limit
		(mg/L)	(mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-fluorophenol	98 %
	2,4,6-tribromophenol	99 %

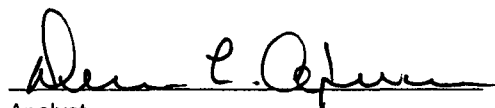
References: Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

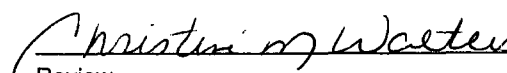
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8040 PHENOLS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Method Blank	Date Reported:	02-20-02
Laboratory Number:	02-14-TCA-MB	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Preservative:	Cool	Date Extracted:	N/A
Condition:	Cool & Intact	Date Analyzed:	02-20-02
		Analysis Requested:	TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
o-Cresol	ND	0.020	200
p,m-Cresol	ND	0.040	200
2,4,6-Trichlorophenol	ND	0.020	2.0
2,4,5-Trichlorophenol	ND	0.020	400
Pentachlorophenol	ND	0.020	100

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	2-Fluorophenol	98%
	2,4,6-Tribromophenol	99%

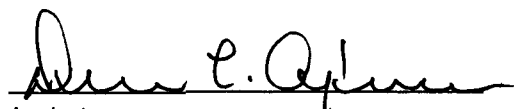
References: Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

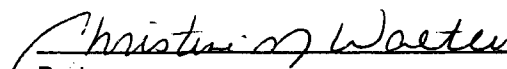
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8040 PHENOLS Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	02-20-02
Laboratory Number:	22037	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Preservative:	Cool	Date Extracted:	02-14-02
Condition:	Cool & Intact	Date Analyzed:	02-20-02
		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Detection Limit (mg/L)	Percent Difference
o-Cresol	ND	ND	0.020	0.0%
p,m-Cresol	ND	ND	0.040	0.0%
2,4,6-Trichlorophenol	ND	ND	0.020	0.0%
2,4,5-Trichlorophenol	ND	ND	0.020	0.0%
Pentachlorophenol	ND	ND	0.020	0.0%

ND - Parameter not detected at the stated detection limit.

QA/QC Acceptance Criteria:	Parameter	Maximum Difference
	8040 Compounds	30.0%

References: Method 1311, Toxicity Characteristic Leaching Procedure Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

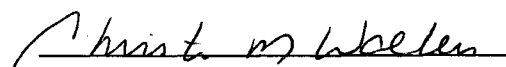
Method 3510, Separatory Funnel Liquid-Liquid Extraction, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8040, Phenols, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8090
Nitroaromatics and Cyclic Ketones
TCLP Base/Neutral Organics
Quality Assurance Report

Client: QA/QC
Sample ID: Laboratory Blank
Laboratory Number: 02-20-TBN
Sample Matrix: Hexane
Preservative: N/A
Condition: N/A

Project #: N/A
Date Reported: 02-20-02
Date Sampled: N/A
Date Received: N/A
Date Extracted: N/A
Date Analyzed: 02-20-02
Analysis Requested: TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

ND - Parameter not detected at the stated detection limit.

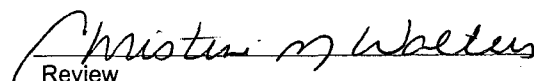
QA/QC Acceptance Criteria	Parameter	Percent Recovery
	2-fluorobiphenyl	100%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.
Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8090
Nitroaromatics and Cyclic Ketones
TCLP Base/Neutral Organics
QUALITY ASSURANCE REPORT

Client: QA/QC
Sample ID: Method Blank
Laboratory Number: 02-14-TBN-MB
Sample Matrix: TCLP Extract
Preservative: Cool
Condition: Cool and Intact

Project #: N/A
Date Reported: 02-20-02
Date Sampled: N/A
Date Received: N/A
Date Extracted: 02-14-02
Date Analyzed: 02-20-02
Analysis Requested: TCLP

Parameter	Concentration (mg/L)	Det. Limit (mg/L)	Regulatory Limit (mg/L)
Pyridine	ND	0.020	5.0
Hexachloroethane	ND	0.020	3.0
Nitrobenzene	ND	0.020	2.0
Hexachlorobutadiene	ND	0.020	0.5
2,4-Dinitrotoluene	ND	0.020	0.13
HexachloroBenzene	ND	0.020	0.13

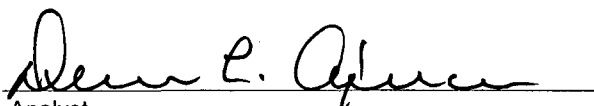
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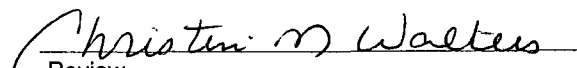
QA/QC Acceptance Criteria	Parameter	Percent Recovery
	2-fluorobiphenyl	100%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.
Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


Review

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8090
Nitroaromatics and Cyclic Ketones
TCLP Base/Neutral Organics
QA/QC Matrix Duplicate Report

Client:	QA/QC	Project #:	N/A
Sample ID:	Matrix Duplicate	Date Reported:	02-20-02
Laboratory Number:	22037	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Preservative:	N/A	Date Extracted:	02-14-02
Condition:	N/A	Date Analyzed:	02-20-02
		Analysis Requested:	TCLP

Parameter	Sample Result (mg/L)	Duplicate Result (mg/L)	Percent Difference	Det. Limit (mg/L)
Pyridine	ND	ND	0.0%	0.020
Hexachloroethane	ND	ND	0.0%	0.020
Nitrobenzene	0.102	0.101	0.0%	0.020
Hexachlorobutadiene	ND	ND	0.0%	0.020
2,4-Dinitrotoluene	0.034	0.034	0.0%	0.020
HexachloroBenzene	ND	ND	0.0%	0.020

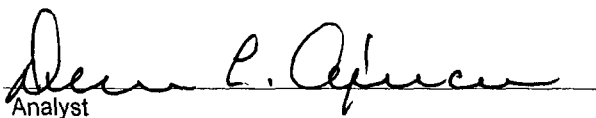
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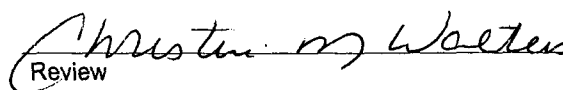
QA/QC Acceptance Criteria	Parameter	Maximum Difference
	8090 Compounds	30%

References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, July 1992.
Method 3510, Separatory Funnel Liquid-Liquid Extraction, SW-846, USEPA, July 1992.
Method 8090, Nitroaromatics and Cyclic Ketones, SW-846, USEPA, Sept. 1986.

Note: Regulatory Limits based on 40 CFR part 261 Subpart C section 261.24, July 1, 1992.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 1311
TOXICITY CHARACTERISTIC
LEACHING PROCEDURE
TRACE METAL ANALYSIS
Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	02-19-TCM QA/QC	Date Reported:	02-19-02
Laboratory Number:	22037	Date Sampled:	N/A
Sample Matrix:	TCLP Extract	Date Received:	N/A
Analysis Requested:	TCLP Metals	Date Analyzed:	02-19-02
Condition:	N/A	Date Extracted:	N/A

Blank & Duplicate Conc. (mg/L)	Instrument Blank	Method Blank	Detection Limit	Sample	Duplicate	% Difference	Acceptance Range
Arsenic	ND	ND	0.001	0.046	0.046	0.0%	0% - 30%
Barium	ND	ND	0.001	0.267	0.265	0.7%	0% - 30%
Cadmium	ND	ND	0.001	0.039	0.039	0.0%	0% - 30%
Chromium	ND	ND	0.001	0.149	0.147	1.3%	0% - 30%
Lead	ND	ND	0.001	0.283	0.280	1.1%	0% - 30%
Mercury	ND	ND	0.001	ND	ND	0.0%	0% - 30%
Selenium	ND	ND	0.001	0.024	0.024	0.0%	0% - 30%
Silver	ND	ND	0.001	ND	ND	0.0%	0% - 30%

Spike Conc. (mg/L)	Spike Added	Sample	Spiked Sample	Percent Recovery	Acceptance Range
Arsenic	0.500	0.046	0.545	99.8%	80% - 120%
Barium	0.500	0.267	0.763	99.5%	80% - 120%
Cadmium	0.500	0.039	0.537	99.6%	80% - 120%
Chromium	0.500	0.149	0.647	99.7%	80% - 120%
Lead	0.500	0.283	0.781	99.7%	80% - 120%
Mercury	0.050	ND	0.049	98.0%	80% - 120%
Selenium	0.500	0.024	0.523	99.8%	80% - 120%
Silver	0.500	ND	0.499	99.8%	80% - 120%

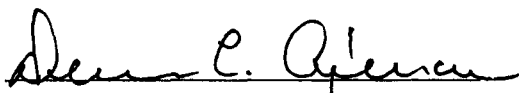
ND - Parameter not detected at the stated detection limit.

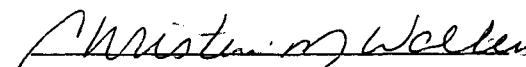
References: Method 1311, Toxicity Characteristic Leaching Procedure, SW-846, USEPA, Dec. 1996

Methods 3010, 3020, Acid Digestion of Aqueous Samples and Extracts for Total Metals,
SW-846, USEPA, December 1996.

Methods 6010B Analysis of Metals by Inductively Coupled Plasma-Atomic Emission,
SW-846, USEPA, December 1996.

Comments: QA/QC for samples 22037 - 22039 and 22041.


Analyst


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